II ~~Geology of the~~ The Black ~~River area~~, 1/2 and Palmer River areas (Stylet. 1836)

~~In contrast to what occurs at Palmer Junction camp area~~, the base of limestone (seemingly non-fossiliferous) is disclosed ~~along~~ in almost all of the stream-beds. That limestone appears in the bed of the Palmer at and below camp and upstream at all of the principal forks. In the beds of the two main tributaries of the creek just west of camp and in the creek bed proper, water cutting has ~~scoured~~ channeled the limestone to a depth of at least four feet.

The overlying material along the river and its floodplains is composed of silts, clays, lignites in process of formation and occasional lenses of gravel or shingle. Beyond the range of influence of the river, however, the limestone lies beneath a considerable thickness (up to 200 feet) of clay or sandstone conglomerate, whose pebbles, for the most part rounded, comprise quartz, older sandstone and a yellow fine-grained, rather hard shale-like rock. Some of each of the above mentioned pebbles ~~are~~ break up into angular fragments.

The gravel bars in the Palmer ~~contain~~ include pebbles of quartz, a hornblende granite, a blackish flinty rock with (?) cleavage into block form, hard sandstone, fossiliferous and non-fossiliferous limestones (chiefly corals), the hard yellow shaley rock alluded to in the previous paragraph, a micro-conglomerate-like rock containing what look like feldspar crystals (possibly this is really igneous).

The limestone and overlying conglomerate rock correspond to the elevation limestone of the mentioned with the overlying (uplifted) caps of a mudstone.

II at the ~~Ideas on the Geology of the Sly~~ Palmer River

~~Clay~~ deposits ~~so far discovered~~ overlying the limestone, with the exception of included pebbles, appears to be very recent. The sandstones are friable & uncemented, the clays are almost all unconsolidated, and the lignite is yet woody - so much so that spines of {~~Acrostichum aut Bora~~ Sabal palm spines} stand out free in the laminae. Slight folding with E-W strike may be actual, or the recent beds may have been laid down on earlier folds which erosion ~~(rapid)~~ is again uncovering. The seeming strike of the local ridges is parallel with the big mountain system ~~120~~ 30 miles to the north. The ~~viewpoint of general~~ apparent E-W strike of the ridges ~~to supported~~ accompanies ~~the~~ the E-W courses of the Black River, Elevala River,

Notes made from Stanley's map. 1/4
While in Port Moresby. Feb. 1931

1. Lower Fly alluvium appears to be recent in age and from its deltaic coast line and the remoteness of the 100-fathom line to be raised sea bottom or else peneplain possibly continues across the Torres Straits with Cape York.

Mabadwan Hill, granite, may well be a bathylith exposed by removal of overcovering rocks in remote times. Aird Hill and Kikori may also be bathyliths.

The above warped area appears to extend to and end at the Purari River, beyond which the coast line becomes straight, but note that the 100-fathom line approaches the coast only at Yule Island.

Low hills are indicated at Everill Junction on either side the Fly-Strickland. Their geology is apparently unknown.

Look for change in rocks of Morehead region (zoological evidence)

The entire lower Fly + Torres area may be old peneplain whose basal rocks are concealed by new alluvium, the northern part slightly upwarped, the southern portion downwarped to form the Torres Straits. The hills at Everill Junction perhaps represent part of the above warping.

Notes from Stanley's map Feb 36 2/4

2. Note that the only Eocene rocks in N G lie just east of the Fly River by the Elevala River and Macrosson Island.

3. Stretching from somewhat west of the headwaters of Fly & Strickland to Kikori a huge series of lime sedimentaries indicate the former presence of a large geosyncline which existed (?) from Jurassic (beds at obscure bend on Strickland) time until Pliocene time (beds at upper Fly & Strickland and small series just west of Kikori). Geosyncline probably extended through mt Purari-Kerema region (rocks Plio-Miocene). The large mass of extrusives centering on Mt Favenc are probably recent and may well have furnished the sediments covering the Plio-Miocene beds between Kikori and the Purari delta.

??? Or if all coal limestone then a series of shallow seas

At the end of Pliocene the geosyncline may have been filled up and the upthrust movement northwest of Kikori have been initiated.

The connection of the geosyncline with the ocean may have been at either end - in Dutch N.G. or thru the Kikori area. At that time the Lower Fly peneplain may well have been continuous with Australia.

Notes from Stanley's map

Feb 36

3/4

The immediate neighborhood of Port Moresby strongly resembles a drowned coastline. The rocks are very old sedimentary shot full of igneous or infiltrated material and appear not to be very resistant to weathering. At the same time the great mass of the Astrolabe just behind P. Moresby is recent volcanic. Therefore perhaps the coastline sank (from loading?) at about the same time or just following the formation of the Astrolabe extrusions. At sea the fall is comparatively steep, the 100-fathom line being about 12 miles off shore. The islands nearby are of drowned hilltops.

If the age of Mt Lawrence, Yule and Astrolabe lavas is Pleistocene and the topography of those regions and of the great limestone belt to the west is comparatively youthful then the greater part of the uplift of the geosyncline, warping of the Torres area and sinking of the Moresby coast may well have taken place at one and the same age, namely during the Pleistocene.

Notes from Stanley's map

Feb 36 (ay?)

4/4

5 If the above remarks are been approximately near the truth the ~~sea~~ sea lying north + north west of the Turana River would have functioned as a barrier against the passage of the Australian fauna which was at that time ranging into the southern part of Western Division. This is not the case.

The similarity of the Moresby fauna to that of the lower Fly area and north Queensland and the recent discovery of Nototherium in southeast New Guinea ~~[illegible]~~ suggest that the exposed Torres peneplain was joined across the shallow "Gulf" to the Lekekamu, Angabunga and Laloki plains. The animals which show the above type of distribution today are: Macropus agilis, Isoodon moresbyensis, Rattus brachyrhinus, Uromys validus. On the other hand birds + plants offer no substantiation of the above view

Topographic notes on the Headwaters Region of the Fly River, Papua
(with map) 1/10

One of the ~~the~~ by products of the Archbold expedition to New Guinea has been the careful checking and

correlation of the observations and maps of earlier explorers of the upper reaches of the Fly River with elimination of a number of geographical synonyms. This work has been enormously facilitated by the cordial cooperation of Mr. Leo Austin and Mr. ~~Clayde~~ Ivan Champion, two ~~of the~~ original observers, ~~which~~ the former not only put ~~these~~ his field notes ~~and knowledge~~ at my disposal but also gave considerable time to help me with the interpretation of those notes.

The men who ~~worked~~ have explored and mapped the region under discussion are D'Albertis, Sir William MacGregor, Mr. Leo Austin, Messrs. C. H. Karius and Ivan Champion, and the members of the 1936 Archbold Expedition which worked under the auspices of the American Museum of Natural History, New York.

D'Albertis.

1. MacGregor, Sir W. Ann. Report. British New Guinea. 1889-90 pp. 43-64

2. ~~Leo~~ Austin, L. Geogr. Journ. LXII, 1923, pp. 325-349 (Tedi R.); J. & Proc. Austral. Hist. Soc. XI, 1925, pp. 251- (Extent of D'Albertis voyage); Geogr. Journ., LXVII, 1926, pp. 434-441 (Tully R.).

3. Karius, C. H., over

2/10 Topo Notes

3 Karius, C. H. Geog. Journ. LXXIV, 1929, pp. 305-322;

Champion, ~~Clark~~ Ivan E. (book).

As regards the Archbold expedition, ~~Our recent work was greatly aided~~ several flights by ~~The use of an~~ aeroplane ~~over the~~ any the mountains forming the source of the Fly River and its upper tributaries gave a splendid opportunity to gain a broad grasp of the general geography of the area before going into the rougher country on foot. In fact ~~it was~~ the repettable loss of the plane ✓ ~~was the only~~ alone

✓ It capsized at anchor in Port Moresby harbor

~~reason for our failure to secure~~ prevented us from securing much more extensive geographical data.

The map published by Macgregor, who had with him Mr J. B. Cameron a qualified surveyor, has been used as a base on which to place newly observed data. To that map Austin and Karius made many successive additions and alterations ~~to the~~ while preserving the general course of the Fly (and higher up of the Palmer) River as far as the "607-mile" mark on the

latter river.

~~It was~~

Messrs M. J. Healy and A. Willis took a series of compass bearings ~~at~~ from a number of stations in the catchment basin of the Palmer and at our ~~camp at~~ "Black River Camp". My first move was to plot in these bearings over Karnes's map and change the mapped positions of several features which were clearly ~~mistakenly placed~~ out of their true places. The corrected plan agreed well with the rough sketches earlier prepared after completion of the aerial reconnaissance work. Incidentally, Mr. ~~Clarke~~ Ivan Champion accompanied us on some of these flights in order to ~~and~~ point out various rivers and mountains. Later on returning to ~~reaching~~ Darwin I met Mr. Leg Austin, who as already stated was so kind as to go into the matter very thoroughly with me. I also plotted the bearings published by Macpegor, ~~and~~ being reasonably sure that I recognised the position of ~~the~~ the two stations from which his bearings were taken. These bearings if "true" ~~with~~ coincided very exactly with features on the map which I had

~~Fro~~ drawn earlier. ~~From~~ Selecting from a wealth of original sketches, notes & bearings I was able to do likewise with ~~that~~ Austin's work on ~~the~~ his Tedi River trip.

The results are ~~very~~ interesting in that a number of named ~~geo~~ topographical features are now found to be wholly or partly synonymous:

Victor Emmanuel Range. This name was first used by D'Albertis for - . . . .

By Macgregor it was used (bottom of p. 55) first in much the same vague sense as by D'Albertis. Subsequently (p. 59) ~~he describes under~~ it's ~~were~~ briefly described ~~and~~ component parts. The "nearer chain" agrees well with Mt Saré (=); "the more distant" was (I believe) Mt Jaim of the Daf Range (Champion). ~~The~~ Macgregor illustrated both in ~~his~~ "plate no. 2" giving thereon bearings which exactly coincide with ~~the~~ our mapped position of the eastern end of Saré and nearly with ~~Champion~~ Karius's Mt Jaim. But before Karius entered the region Austin had applied names to MacGregor's text & plate, calling

the "nearer range" (or eastern end of Mt Sare) Macgregor Peaks and the "more distant" (or Mt Fain) D'Alberti's Dome. But returning again to Macgregor's concept of the Victor Emmanuel Range, we read (p. 60) that the Victor Emmanuel Range lay directly behind a lower range which he called Mt. Donaldson. "In between the north-east end of Mt Donaldson and the Victor Emmanuel there is fitted the bold western end of a very steep & rugged mountain range" (named by him Mt. Blücher), and "a large spur of this mountain [Blücher] proceeds from about its central portion in a north-easterly direction [i.e. Mt. Tungom]... but whether it joins the great Victor Emmanuel Range farther north could not be seen." He states that his plate 4 indicates the appearance of the foregoing from a distance of "twenty- to twenty-five miles"; but when the bearings which accompany the drawing are plotted it proves to have been much closer; and besides, a few sentences before, he states that Donaldson was "about ten miles" away. From "plate 4" it seems that the mass of hills to the west marked "a" & carrying a

bearing of 334° is part of Saré and represents the approach slopes of Macgregor Peak (Austin); the single hill next, also marked "a" corresponds in bearing with the isolated conical hill Mt. Karik (~~named by~~ Karius); ~~and~~ the long, distant slope, again marked "a" is, I believe, a part of the Dap Range; and the faintly indicated distant range beyond Mt Blucher between 34° & 38° indicates the connection of Blucher with the Dap by way of Mt Turgom.

The assumption is necessary in dealing with Macgregor's published work that ~~this~~ the bearings shown on his diagrams are "true". If instead they were magnetic, and the bearing for the western tip of Blucher were thus 16° "true" instead of 20° the back-ray ~~from~~ would in no place approach the Palmer River closer to than one and a half miles, whereas it is clear from his text that the views were had from the river itself.

Taking the foregoing facts into consideration I feel convinced that the Victor Emanuel Range ~~as the term was~~ ~~used~~ in the sense by Macgregor was equivalent to the 9000-foot Dap range with

its high point D'Albertis Dome (= Mt Jain), plus the 8000-ft range Mt Lyons (= Mt Saré, the man-of-war mountain of Champion's account). That either D'Albertis or MacGregor ~~saw~~ could have seen the range beyond the Dap Range and Strickland river which Karius marks "Victor Emmanuel" on his map seems to me improbable. ~~And the spur range of the Chatteburg Mts on which Karius has bestowed the name D'Albertis Dome is obviously~~ And Karius's use of "D'Albertis Dome" for the spur range of the Chatteburg Mts east of 142° and north of 5° is obviously erroneous, since it lies about 25° east of MacGregor's say for ~~the~~ the real "D'Albertis Dome".

But ~~even~~ though the above arguments be substantially correct, the names Victor Emmanuel and Dap have ~~been used~~ come into use respectively ~~very generally~~ for the ranges to the north and south of the Strickland River, and considering that we shall never know just what range or combination of ranges were ~~given the~~ called by D'Albertis "Victor Emmanuel", it would cause much needless

confusion to suggest any change at this date.

In regard to Mt Saré (= Mt Lyons (part), = MacGregor Peaks (part), = Kaban Range (part) the situation is different. Mr Austin, among whose sketches are numerous outlines definitely recognizable as depicting ~~Mt~~ Saré, informs me that his intention ~~when using~~ was that the name Lyons should

after Mr Lyons

apply to the massif itself — the largest, most imposing mountain of the northern skyline. Instead it became localized to ~~one~~ part only of Saré, to one of the major foothill ranges reaching out to the SW from its southeast end ~~and~~ (map, p. 436). The name Mt Lyons was proposed by him in due form (p. 439), but a few lines beyond he suggested the name MacGregor Peaks for the western of the two mountain masses shown by MacGregor on his "plate no. 2", but, as stated earlier, MacGregor's western mountain mass represents the ~~eastern~~ end of Mt Saré, so that Austin ~~was~~ actually renamed a part

of his own Mt Lyons. The usage of the names Saré and Kaban dates only from Karius's report (1929). ~~and so~~

Mr. Austin who ~~has~~ is conversant with the steps of this inquiry has expressed the wish that his name "Lyons" be extended to the usage the "Lyons Range" (see map p.). If that proceeding were sanctioned then ~~only~~ Mt. Saré, ~~would such a step~~ may could be treated as a pure synonym, and Kaban, Wuni, MacGregor Peaks, Karik and Donaldson would refer to special portions of the Lyons Range.

~~Regarding~~ The names D'Albertis Dome (Austin) and Fain (Karius) refer unquestionably in my opinion to the same mountain, and the former has priority over the latter.

Quoting MacGregor "On the 19th... in the forenoon we passed a large branch nearly 100 yds wide, which entered ~~the~~ on the right bank. This tributary I have named the Donaldson river...". Again "on the morning of the 20th.... a large branch nearly or seventy yards broad entered the river on the left bank... This affluent I have named the Block River..." Now MacGregor spent a lot of the time ~~intervening~~ used in going from the Donaldson River

to the Black in examining native houses, so it is improbable that more than six hours of actual travel are involved. The position of his Black River is not in the least in doubt, and the only large river entering that part of the Palmer ~~[illegible]~~ on the right bank is the Tully (or Wai Mu). Our own travel time downstream from the Black to the Tully is: Black R. to our camp by boat (low river) 15 minutes; our camp to overnight bivouac (low river) 2½ hours; from bivouac to Tully (flooded river) ½ hour. ~~[illegible]~~ Total a little over 3 hours. In view of these facts there can be no possible doubt that the names Donaldson and Tully refer to the same river.

This was done by rafting on the flood we arrived at Pelican Junction at 4 p.m.

Having myself gone over certain parts of the tracks followed by Karius and Champion, I have been able to recognize a number ~~several~~ features among their topographical photographs ~~[illegible]~~ to which attention ~~was~~ not drawn in the captions; and knowing the approximate position from which a given ~~the~~ picture was made I have been able to check those features ~~insert those photographs~~ with the map. Thus: - - - -

Journal

The Fly River. –

1. Discovery – naming.
2. History of Exploration – D'Albertis, Mc Pherson, Mr Gregor. Everill – Austin – Cowling – Dana Magistrates – Austin & Thompson – Effevala trip. Harris & Champion –
3. Basin – Area – Source – Volume water, Chief tributaries; Depth – Current – annual variation – Climate; Tides – Bore. – Water (characteristics). Lagoons
4. Geology — County rocks – antecedent or subsequent — Watersheds – warping – Current variations & held-back waters. Age of present system. Islands Cut banks – pebbles – lignites – Catepillars – Oil Soil.
5. Vegetation – Zoology —
6. Man.
7 Map.

Orovilla Co.

Airplane Observation
Brandis Expd.

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E R Stanley Contrib Geol. Papua. Bull. No 7 1921.

C T Cotton A contrib to our knowledge of the flora of Papua

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" Geol. expd across Owen Stanley Range. Ann Rept, Papua. 1917-18 p. 75

" Report on Geol & Nat Resources – in report to League of Nations on the administration of New Guinea 1921-22 – Gov. Printer Victoria

over

IN RE

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THE AMERICAN MUSEUM OF NATURAL HISTORY

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1936 NEW GUINEA EXPEDITION
RICHARD ARCHBOLD, Leader and Pilot
A. L. RAND, Ornithologist and Assistant Leader
G. H. H. TATE, Mammalogist
L. J. BRASS, Botanist
R. R. ROGERS, Pilot and Mechanic
EWING C. JULSTEDT, Radio Operator

FIELD HEADQUARTERS:
DARU, W.D., PAPUA

Austin's reports: - 1. The Tedi (1923) — 1921-22 (map. p. 339.)
3 ~~2~~ The Tully to (1926) — 1924-
2 ~~3~~ D'Albertis (commentary) (1928-)
(4. The Delta Division) (1934).

Star Ints. (See Austin 1. (above) footnote under p. 349.)

Possible correlations

Austin's "Mt Blucher" OK.
" "Mt Donaldson" = ~~Mt Karik or~~ western tip Saré
" "Mt Lyons" = Eastern tip of Saré
" "Mt Wrenn" = ~~Middle Saré or possibly the western end~~ Southern projection of Saré
" "Mt Warr" = Wedge Hill = ~~?~~ ~~western tip of Saré~~ no.
" "D'Albertis Dome" bears slightly east of Mt Jain. ~~It may be central Saré~~

Dalbertis Dome is the block of Saré forming its E end.
Mc Gregor Peaks equal Central & western Saré

The Geography of the Fly River Region, New Guinea.

✓ Introduction
✓ Chief Divisions of the River
✓ The Strickland River
✓ Water partings
✓ Recent Earth movements and adaptations
✓ Rock exposures
✓ Limestone fossils.
✓ ~~Post miocene~~ history.
✓ ~~Tertiary~~ fossil beds.
✓ Economic mineralogy.
✓ Climates with seasonal changes in river level.
Rate of flow
✓ ~~The~~ Strachan Island possibly an old mouth of Fly.
✓ Relationship of Aru to S. N G.
✓ Moresby a subsidence area. Drowned Coast, the Coral sea deep. Barrier reefs.
✓ The mountains of Strickland - Fly - Descript. Marla
✓ Eocene rocks.
✓ Jurassic at observation hill Strickland
✓ Mt Davenc
✓ Laterites
✓ Block diagram of intire area.
✓ Deposits at Palmer Jetin overlying limestone

In three months the expedition used more than fifty pounds of soap.

During those first days at the upper base the tag end of the rainy season was still a factor. After lovely mornings and noon hours the clouds ~~would~~ banked up in the east, great rolling cumuli ~~would creep~~ crept around the south tip of the mountain and to the tune of the roll of thunder, the storm came rushing over the tree tops. The wind lashed and tore at our canvas, and the rain drove through the whole camp, while the frequent "snick, snick" of nearby lightning warned us ~~all~~ more forcefully than the more distant crash and roll ~~of more distant rays~~ of the danger inherent in such tempests.

When a storm was approaching we ~~invariably~~ grounded our wireless aerial. ~~For~~ An ungrounded aerial or a receiver even if it has a ~~with~~ ground wire attached is easily wrecked by lightning. ~~The first day~~ When Cardona and I first rigged ~~were rigging~~ the antenna, ~~while~~ thunder growling in the distance, the wire had been pulled up with a running line over the radio pole only a few seconds before I took the end of the lead-in in my hand to connect it with the receiver. It gave me quite a severe shock, having in that short space of time picked up a heavy charge of static electricity.

Cardona used to fuss all day long with his radio. When he was not dealing with the Arecuna Indians -- paying them for services rendered, dealing out Epsom salts or castor oil, measuring rice, cassave and cans of beef -- he took the motor generator a part and cleaned it, he wired in condensors and coils, or took them out, he changed tubes and manipulated batteries. In fact he indulged in a perfect orgy of those activities characteristic of the radio fanatic.

~~But~~ All our doings at the upper base were only preliminaries. Inevitably sooner or later conversations worked around to the main problems: the condition of the trail, the details of transport, the size and membership of the first party to go up, but particularly we speculated upon the geology, the vegetation and the animals and birds that would be discovered on the plateau, whose altitude above sea-level even was still ~~unsettled~~ problematical.

1 Introduction - ~~Historical~~ rate of flow? - Climate.

2 Chief Divisions of the river

~~3.~~ 2a The Strickland River

4. Waterparting

5. Detailed observations at.

a - The limestone moraines - block diagram

b. Black River

c Palmer River

D. Lake Davenport

E Strut Island Camp.

F. Dam.

G. Stracham Island.

H Sundry exposures.

~~7.~~

6 Aerial observations

7 Regional relationships

8. Biology - life zones.

a ~~Zool.~~ Bot.

b. ~~Bo~~ Zool.

9. Man. - exotic.

b aboriginal

10. Summary.

11 Bibliography.

Jurassic
Eocene.
Miocene - Limestone fossils
Pleistocene - Laterites.

Recent Earth movements. Vulcanism
Stracham Island.
Ancn & Coral Sea - reefs.
Post Miocene History.
Economic mineralogy

transfix a hummingbird as it hovered infront of a flower.

The 1100 meter camp, ~~as we came to call it,~~ as explained earlier, stood in a savanna nearly a mile long ~~in length~~ and perhaps a quarter of a mile wide. ~~The camp~~ had been used before our arrival by Cardona, Heny and Jimmy Angel. Angel had had a short runway for his Flamingo plane along the smooth part of the savanna, but the field was found on pacing it off to be much too short for use by the big plane that flew us in from Ciudad Bolivar.

All the northern side of the savanna was margined by the tall forest in which I had my traps set. The southern side was edged by a narrow marsh across which was a shrub covered, rocky area sloping gently towards the savanna. Beyond that came more savannas, deep ravings and forest-clad hills.

From the middle of the savanna you looked northwards over the forest at the steep, fire-swept slopes leading up to the enormous craggy cliffs that guarded the Auyan-tepui plateau. Cardona pointed out the precise crevice up which he and Heny months earlier had contrived to ascend. He showed me also a crack farther east which they had tried and abandoned after following it into the sandstone for some distance.

Bill Coulats ~~began to complain bitterly~~ announced flatly one morning that at the rate the peons and Indians were tucking into the food supplies we should all be starving in a month. We found too a definite let-down in the behavior of one of the men ~~to be precise~~ Hector. Hector had been playing "old soldier" for some days, making the most of a swollen leg which had developed on the way up from the air field. That something was really wrong with his leg was evident however. So he was given light duties such as washing laundry. Any way the food issue was more closely watched.

Speaking of camp laundry, the number of shirts, trowsers and socks used daily by six or seven men is perfectly astonishing. About a cake of soap is ~~consumed~~ used up daily by the laundry boys and then ~~they get~~ the clothes are only half clean. Hector and Fernando, the latter a relict of Gustavo Heny's trip, and ~~the~~ owner of an enormous broad brimmed hat, were detailed to do the washing, but they proved a pretty worthless pair. And later when Cardona was compelled for domestic reasons to leave us they went out with him.

W.T.

In consid. sum below.. p.s.p. undertakes to convey 200 cubic yards of "sandy loam" from old ice pond - and spread same at ——— with the following manner.

1. Provide permits -
2. Work subject to rain temporary contract -
3. Smooth finish - edges not to wet soil.
4. Responsible for injury to soil pipes, water tank, septic system shall not with p.s.p.
5. Dk ~~[illegible]~~ distribute of pond - left bank.

&

In in consider of satisf job the sum of 150 shall be paid --- Subject to further provision which follows:

1 - Approval. Non approval - work corrected

2 - Any injury to sewage system, water tank, trees or shrubs shall be deducted from the said $150

3. Work shall be completed by May 30 ~~Oct~~, If contract incomplete at that date whole contract shall be void, nor shall any claim be preferable for any portion of work done

In consideration only of the completion of the work handled under separate contract, in which the party of 2 pt undertakes to remove 200 cu yds scoop bowlder from ice pond and to spread same and level, this additional contract to be entered into —

P.S.P. undertakes to remove sufficient additional scoop bowl. to produce a lake at the site of the old ice pond whose sides shall ~~stay~~ conform with the natural slope of the former ice pond and its dirt embankment, of a water-depth of one foot below the level of the present spillway. And from the present spillway the soil shall also be packed with a slope to conform to that of the said slopes of ice pond. ~~and~~ adjoining the boundary line of the ~~and~~ adjoining ~~property~~, now the property of C. B. Dear the sides shall be vertical.

~~The~~ Subject to the completion of the above described work in a manner satisfactory to the party of f.p., the said p.f.p. shall pay to p.S.P., the sum of ——— but this money shall not become due until after the p.f.p. shall have approved the work.

B. M. Fossil Rodents (Indo-Australian).

Extensive collections from caves of Borneo, coll. Everett.

R. exulans New Caledonia - mostly limb bones.

Various - Rattus, Conilurus, Wellington Caverns N.S.W. also Mastacomys

" " Fish R. Caverns, Blue Mtns, N.S.W.

BM. fossil Bats.

Taph.
Saccolaimis Tam. M 2964 Madras. narrow V palate.

Hipposideros diadema " "

B.M. fossils.

Pseudocheirus candivolvulus – Fish R. Caverns, Blue Mtns NSW.

M. 10063. mx with m^x m^y m(alveolus)^z.

Front of m^y beneath zyg. root.

m^x	4.5 x 3.6	tooth movable – unmineralised. Teeth unworn.
m^y	4.2 x 3.6	

M 3651 mx with p^4 & m^1. Wellington Valley Caves N.S.W.

p^4	3.2 x 2.35	unmineralised unworn.
m^1	4.4 x 3.6	

Large series of Macropodidae.

Good lot Aepyprymnus Wellington Valley –

Few bandicoots & Dasyurus – one ~~for~~ Phascogale or Sminthopsis M.10062

All material appears virtually the same as recent stuff.

NOTES

	Letter No.	P
Bats (front)	24	3, 6, 16
Bats (most)	24	16
Dobsonia	14	4
	17	3
Dorcopsis	24	3, 6, 19, 20
Echimypera	24	19
Hipposideros	24	10
Hydromys	24	6
Leptomys	24	7, 18
Lorentzimys	17	10
Macroglossus	17	6
	19	4
Macropusbrunii	24	6
Mammals on Fergusson Isl.	26	6
Melomys 2254-6	17	5
2265	24	1, 3, 7, 19, 20
2263		
Nyctimene	17	3
	18	2
Phalanger	24	16
Phascogale	26	6, 9
Rat (New)	25	11
Rattus	24	18
Rhinolophus	24	10
Uromys	24	7, 8, 9, 10

Tides

Daru	12	2
Fly R. above Madiri	16	3
Sturt Isl.	24	4, 7, 12, 14, 15,16,17,18, 21.
Tarara	25	12, 13.
Gija	25	15

SECURITY LINEN BOND
BEST COPY AVAILABLE

NOTES

	Letter No.	P
Bats (front)	24	3, 6, 16
Bats (moat)	24	16
Dobsonia	14	4
	17	3
Dorcopsis	24	3, 6, 19, 20
Echimypera	24	19
Hipposideros	24	10
Hydromys	24	6
Leptomys	24	7, 18
Lorentzimys	17	10
Macroglossus	17	6
	19	4
Macropnabrunii	24	6
Mammals on Fergusson Isl.	26	6
Melomys 2264-6	17	5
2265	24	1, 3, 7, 19, 20
2265		
Mycticmene	17	3
	18	2
Phalanger	24	16
Phascogale	26	6, 9
Rat (New)	25	11
Rattus	24	18
Rhinolophus	24	10
Uromys	24	7, 8, 9, 10

Tides

Dara	12	2
Fly R. above Madiri	16	3
Sturt Isl.	24	4, 7, 12, 14, 15, 16, 17, 18, 21.
Tarara	25	12, 15.
Gila	25	15

Geology

		Letter No.	Page
Rona Falls		9	2,3
Yule Isl.		10	2
Daru		10	S4A, 5
Leonard Murray Mts.		12	5,6
Banks of Orioma R.		13	1
Dogwa		13	2
Mabaduane		13 14	4 1,2,3
Fairfax Isls		16	4
Shore of Fly (5-9-36		16	6 (over) 7,8
Above Proville Camp		16	11
5 mi. below Palmer Junct		16 17	13 2,8,12,13
Palmer and Black R. Camp		18 19	5,8, (8 fossils) 11 5
Flight to Mts.		20	1,2
Trail to Mabion	7-4-36 7-6-36 7-7-36 7-8-36 7-9-36	21 21 	1,2 5,6 6,7 7,8,9,10 9.10.
West Mabion	7-15-36	21	16
Proville Camp	8-13-36	21	35
L. Diviumba	9-1-36	23	10
Stuart Isl.		24	1,4,8,11,18 (oil
Urio Village	11-7-36	24	22
Wassi Kussa-Mai Kussa Theory about		Main letter 25	 5,6,7,8
Mai Kussa	25	25	1
Tarara		25	2,3,8,9,10,12
Gija		25	14

Azasado	25	25	14
Buji		25	16,18
?		25	19, 20

Maps

Yule Isl.	10	4
Daru	10	14A
Mts. Palmer and Fenang R.	16	10
5 mi. below Palmer Junct.	17	2,8
Palmer and Black R. Camp	18 19	5,8,11 5
Mts. from Palmer and Black	19	3,4
Mts. from plane	20	2
Mt. Mabion and vicinity	21	13
Orville Camp	21	34
Lake Daviunda	23	3,16
Frank's Sketch Map of Daviunba and River	23	24A, 25
Sturt Isl.	24	2,8
Tarara	25	9A

Bandicoots

3 -	Loc.	Date	Letter	Page
3 -	Tarara	12-13-36	25	6

Bats

Sp.				
5	Palmer J.	5-28-36	17	11
?	5 mi	"	17	12
?	"	5-31-36	17	14

SECURITY LINEN BOND
BAC CONTENT

Bats.

	Sp.	Loc.	Date	Letter	Page
?		5 mi.	6-31-36	18	2
4		Palmer and Black	7-?-36	21	20
6	(3 spp)	L. Daviamba	9-17-36	23	20
14		"	9-18-36	23	"
1		"	9-19-36	"	"
1		"	9-22-36	23	21
4		below "	10-1-36	23	24A
12		" "	10-2-36	23	"
1		Sturt Is. C	10-13-36	24	7
1	(2997)	" "	10-15-36	24	10
1	3005	" "	10-16-36	24	11
1		" "	10-24-36	24	15
1	(3069)	" "	10-25-36	24	15
1		" "	10-27-36	24	15
2 ♂s	(same as 2994 (3115-3116)		11-3-36	24	20
6	(♀s 3 of 2996) 3005)		11-3-36	24	20
2	(2 spp)	Tarara	12-4-36	25	2
1	(faint)	Tarara	12-4-36	25	2
1	-	"	12-9-36	25	4
1	(faint)	"	12-12-36	25	5
2	-	"	12-16-36	25	7
1	-	"	12-19-36	25	9
3	(faint)	♂ Beni	1-4-37	25	18
1	(Vespertilionidae ♀)	Sogeri	2-2-37	26	9

Date.	Sp.	Doc.	Date	Letter	Page
7		o mi.	6-21-36	16	2
4		Palmer and Birch	7-7-36	21	20
8	(5 spg)	E. Lavienne	8-17-36	23	20
14		"	8-18-36	23	"
1		"	9-10-36	7	"
1		"	9-22-36	16	21
4	"	below "	10-1-36	26	24A
10		" "	10-8-36	26	"
1		Sgmt In. C	10-12-36	4	7
1	(Wsr)	"	10-12-36	24	10
1	3008	" "	10-12-36	24	11
		"	10-14-36	4	12
	(3081)	"	10-22-36	4	13
1		"	10-27-36	4	15
		(same as Sgmt (Alts-Ins))	11-4-36	24	20
8	(as 7 on 3009) (3008)		11-5-36	24	20
	(" spg)	Farrar	12-1-36	25	3
1	(Pelmf)	Farrar	12-4-36	25	4
1	-	"	12-9-36	25	4
1	(Farrar)	"	12-11-36	25	5
		"	12-16-36	25	7
1		"	12-18-36	25	9
5	(Pelmf)	Dgd	1-7-37	25	18
1	(Wagner-Williams (?))	0 mi	1-7-37	26	9

Dactylopsila

Allied to Dactylopsila		Loc.	Date	Letter No.	Page
1	♂ q	L. Daviumba	9-5-36	23	11 and 12
1		Tarara	12-21-26	25	10
1	skin	Sogeri	1-30-37	26	6

Distocchurus

1	♀	Sturt Is. C.	10-9-36	24	5

Dobsonia (Bat)

4	♀	Daru	2-25-36	10	9
3		"	3-3-36	10	14
1		"	3-13-36	11	3
1	(faint bat)	Dogma	4-3-36	13	2
2		Mabeduane	4-20-36	14	4
2		Palmer J. 5 mi.	5-24-36	17	7
1		"	5-26-36	17	9
1		"	6-3-36	18	9
1		Oroville Camp	8-9-36	21	34
1		Palmer and Polack	6-11-36	18	9

Dorcopsis (Wallaby)

6		L. Daviumba	9-16-36	23	18
2	♂	Sturt Is. Camp	10-7-36	24	2
1		" " "	10-7-36	24	2
1	♀	" " "	10-10-36	24	6
1		" " "	10-25-36	24	15
2		" " "	10-28-36	24	16
1		" " "	10-31-36	24	17

	Sp.	Loc.	Date	Letter	Page
		Dugong			
1		Daru	3-13-36	11	3
		Echimypera (Bandicoot)			
1		Rona Falls	2-16-36	9	7
4	(3 pouch young)	Old Mawatta	4-10-36	13	3
4	3 " "	Mabaduane	4-21-36	14	4
1		Palmer and Black	6-18-36	18	13
1		" " "	6-25-36	19	5
2		Mabion	7-?-36	20	28
?) 1		Sturt Is. C.	10-24-36	24	14
1		" " "	10-29-36	24	17
1	♀	" " "	11-1-36	24	19
1		" " "	11-2-36	24	19
?) 1		Itika	1-26-37	26	4
		Emballonura (Subg. mosea)			
"ano"		Palmer J. 5 mi.	5-23-36	17	6
		Palmer and Black	6-15-36	18	11
2	Nigrescens	L. Daviumba	9-2-36	23	10
		Sturt Is. C.	10-17-36	24	11
		Eptesicus			
2		Madiri	11-10-36	24	22A
		Hipposideros			

Hipposideros

	Sp.	Loc.	Date	Letter	Page
1		Palmer J. 5 mi.	5-24-36	17	6
?		"	5-26-36	17	10
1		"	5-27-36	17	10
?		"	5-28-36	17	12
1	Pullatus	(?) Sogeri	1-31-37	26	7

Hydromys

1		Palmer and Black	7-25-36	21	22
1		L. Daviumba	8-26-36	23	6
1		"	8-27-36	23	7
1		"	8-28-36	23	8
2	♂ and ♀	Stur"	9-12-36	23	15
1		Sturt Is. C.	10-9-36	24	4
1		" " "	10-25-36	24	15
1		Tarara	12-12-36	25	5

Isoodon (bandicoot)

1		L. Daviumba	8-20-36	23	2
1		" "	8-23-36	23	4
1		" "	8-26-36	23	6
7		" "	8-26-36	23	7
1		" "	8-27-36	23	8
1		" "	9-1-36	23	10
3		" "	9-3-36	23	11
1		" "	9-7-36	23	14
1		" "	9-8-36	23	14
1		" "	9-19-36	23	20
1		" "	9-24-36	23	22

Isoodon continued

	Sp.	Loc.	Date	Letter	Page
1		Tarara	12-5-36	25	2
1		"	12-9-36	25-	4
2		"	12-11-36	25	4
5		"	12-11-36	25	5
2		"	12-12-36	25	5
1		"	12-17-36	25	7
1		Buji	1-4-37	25	18
1	♀	"	1-4-37	25	19

Kerivoula

?		Palmer J. 5 mi.	5-27-36	17	11
1 (?)		L. Daviumba	9-16-36	23	13

Leptomys (?)

2	♀	Sturt Is. C.	10-12-36	24	7
1	♀	" " "	10-25-36	24	15
1		" " "	10-31-36	24	18

Lorentzimys

1		Palmer J. 5 mi.	5-23-36	17	5

Macroglossus (Bat)

1		Daru	2-26-36	10	10
1		Mabaduane	4-16-36	14	3
1		"	4-18-36	14	3
1		"	4-21-36	14	4
(killed by rat) 1		Palmer J. 5 mi.	5-26-36	17	10

Macroglossus (Bat)

	Sp.	Loc.	Date	Letter	Page
1		Daru	2-26-36	10	10
1		Mabaduane	4-16-36	14	3
1		"	4-18-36	14	3
1		"	4-21-36	14	4
	(killed by rat)				
1		Palmer J. 5 mi.	5-26-36	17	10
?		Palmer and Black	6-15-36	18	11
		Sturt Is. C.	10-28-36	24	16

Macropus (Wallaby)

3		Wurvi	4-1-36	13	1
2		Dogma	4-2-36	13	2
1	Agilis ♀	Mabaduane	4-19-36	14	4
2	" ♂ and ♀	"	4-22-36	14	5
2	Bruni	"	4-23-36	14	5A
4	Agilis	L. Daviumba	8-26-36	23	7
1	"	8-27"36	8-27-36	23	7
1	bruni	"	8-29-36	23	8
3	"	"	8-30-36	23	8
4	"	"	9-10-36	23	14
5	brunii	"	9-16-36	23	18
2	"	Sturt"Is. C.	10-10-36	24	6
1	" ♀	" " "	10-27-36	24	15
1	"	" " "	10-29-36	24	17
1		Tarara	12-9-36	25	4
1	brunii	Buji	1-1-37	28	16
1	C. oriomo	"	1-3-37	25	17
1	oriomo ♀	"	1-4-37	25	19
1	agilis	"	1-4-37	25	19

Macrocystis (Ser.)

Sp.	Loc.	Date	Depth	Type
1	Dero	9-28-36	10	10
1	Boomerang	4-15-36	14	8
1	"	4-30-36	14	6
1	"	4-21-36	16	4
1 (Killed by rain)	Palmer s. 5 m.	5-28-36	17	10
1	Palmer and block	5-15-36	18	12
	Shark Is. G.	10-28-36	4	16

Laminaria (Walkby)

3	Duval	4-1-36	16	1
3	Dogs	4-2-36	13	3
1 Agilis	Anchorage	4-19-36	14	
2 " Gaio	"	4-22-36	14	4
2 Druvii	"	4-23-36	14	6
4 Agilis	B. Davidson	5-26-36	15	7
1 "	"	5-27-36	15	7
1 Druvii	"	5-29-36	15	8
2 "	"	5-30-36	15	6
4 "	"	5-10-36	15	14
5 Druvii	"	5-15-36	15	18
2 "	Shark Is. G.	10-10-36	3	5
1 " 2	" "	10-27-36	4	15
1 "	" "	10-23-36	3	17
1	Terra	11-3-36	15	4
1 Druvii	Agil	1-1-37	15	16
1 G. Gaiono	"	1-3-37	4	17
1 Gaiono 2	"	1-4-37	15	10
1 Agilis	"	1-4-37	15	12

Melomys

	Sp.	Loc.	Date	Letter	Page
3		Rona Falls	2-15-36	9	6
2		" "	2-17-36	9	8
1		Daru	2-29-36	10-	11
1	Muscalis	"	3-2-36	10	12
	skin not made up because damaged				
2	Muscalis	Daru	3.3.36	10	13
2	"	"	3-4-36	10	14
1	"	"	3-5-36	10	14
1	"	"	3-7-36	10	15
1		"	3-8-36	11	1
3		"	3-17-36	12	2
1	Muscalis ♂	"	3-18-36	12	2
2	" ♀	"	3-19-36	12	2
?	"	Old Mawatta	4-10-36	13	3
2	"	Mabaduane	4-18-36	14	3
1	"	"	4-19-36	14	4
1	"	"	4-20-36	14	4
2		"	4-22-36	14	5
2		"	4-23-36	14	5A
1		"	4-24-36	14	5A
3		Fly River (?)	5-9-36	16	6
3	(2 sp)	(5 mil below Palmer Junc.)	5-16-36	16	14
1	♀	"	5-22-36	17	4
1	♀	"	5-26-36	17	9
?	(2 sp)	"	5-27-36	17	10
1	(Terrestrial)	Palmer J.5 mi. below	5-28-36	17	11
2	(ground)	"	5-28-36	17	11
1		"	5-31-36	17	14
2 or 3		"	5-31-36	17	14

Melomys continued

	Sp.	Loc.	Date	Letter	Page
1		Palmer J. 5 mi. below	6-1-36	17	14
1		Palmer and Black	6-8-36	18	7
1		" "	6-9-36	18	7
1		" "	6-12-36	18	9
1		" "	6-13-36	18	10
?	arboreal	" "	6-15-36	18	11
1		" "	6-18-36	18	13
1	terrestrial	" "	6-21-36	19	2
1	arboreal	" "	6-22-36	19	3
1	-"-	" "	6-22-36	19	3
3		" "	6-28-36	20	2
1	gracilis(?)	" "	6-29-36	20	3
1		" "	7-2-36	21	1
3 (?)		On way to the mts. In formal.	7-8-36	21	7
1		Camp Koti-sala	7-12-36	21	12
1		Palmer and Black	8-1-36	21	28
?	(2sp)	Mabion	7-?-36	21	28
1		Palmer and Black	8-2-36	21	28
2 (2sp.)		Oroville Camp	8-9-36	21	34
1		" "	8-10-36	21	35
1		Below " "	8-16-36	21	36
3	muscalis	L. Daviumba	8-19-36	23	2
?	(2 spp.)	"	8-20-36	23	2
?	(3 spp.)	"	8-21-36	23	3
2	muscalis	"	8-21-36	23	3
2		"	8-22-36	23	3
1	muscalis	"	8-23-36	23	4

Hatorgs continued

Sp.	Doc.	Date	Between	Page
1	Palmer'd. 5 wd. below	6-1-36	LV	14
1	Palmer and Black	6-8-36	L6	7
1	"	6-9-36	L6	7
1	" "	6-12-36	L8	9
1	" "	6-12-36	L8	10
2	Eurorsal "	" 6-12-36	L8	11
1	"	" 6-12-36	L8	12
1	Terrestrial "	" 6-24-36	L9	7
1	Euorsal "	" 6-24-36	L9	8
1	" "	" 6-29-36	L9	9
1	Mexicalis(?)	" 6-30-36	30	8
1	"	" 7-2-36	31	1
3 (?)	On way to Cow Ark. Ly for Mex.	7-8-36	31	7
1	Deep Rock-Mex.	7-12-36	31	12
1	Palmer and Black	8-1-36	31	26
2 (Sen)	Mexicalis	7-2-36	31	26
1	Palmer and Black	8-8-36	31	28
3 (Sen.)	Orovillis Camp	8-9-36	31	34
1	" "	8-10-36	31	35
1	Below " "	8-18-36	31	36
2	Mexicalis - R. Davidsonae	8-18-36	32	8
2 (2 sp.)	"	8-20-36	32	9
2 (6 sp.)	"	8-21-36	32	8
2	Mexicalis "	8-22-36	32	8
2	"	8-23-36	32	9
1	Mexicalis "	8-28-36	32	4

Melomys continued

	Sp.	Loc.	Date	Letter	Page
?	(2 spp.	L. Daviumba	8-25-36	23	5
?		"	8-26-36	23	6
1	Muscalis	"	8-27-36	23	7
1		"	8-27-36	23	7
1	Muscalis	"	8-29-36	23	8
1	-"-	"	8-29-36	23	8
1	---	"	8-31-36	23	8
1	Muscalis	"	9-1-36	23	10
1	"	"	9-2-36	23	10
1	"	"	9-7-36	23	14
1	"	"	9-9-36	23	14
3	"	"	9-11-36	23	15
1	"	"	9-12-36	23	15
2	(2spp)	"	9-13-36	23	15
4	Muscalis	"	9-17-36	23	19
1		"	9-24-36	23	22
3	Muscalis	L. Daviumba	9-28-36	23	23
1	" ♀ (2 young)	"	9-29-36	23	24
1		Sturt Isl. C.	10-8-36	24	3
1		" " "	10-9-36	24	4
1		" " "	10-10-36	24	6
-	2spp.	" " "	10-11-36	24	6
-		" " "	10-13-36	24	7
1	(terrain)	" " "	10-18-36	24	11
1		" " "	10-23-36	24	14
1	(3059)	" " "	10-24-36	24	14
1		" " "	10-27-36	24	15
		" " "	10-28-36	24	16

Melomys continued

	Sp.	Loc.	Date	Letter	Page
2	(arboreal	Sturt Isl. C.	10-28-36	24	16
1		" " "	10-30-36	24	17
1		" " "	11-2-36	24	19
2	(2 spp.) (3118, 3119?)	" " "	11-3-36	24	20
1	Muscalis madiri	Madiri	11-11-36	24	22A
	"	Tarara	12-6-36	25	2
3	"	"	12-7-36	25	3
1	"	"	12-12-36	25-5	5
1		"	12-12-36	25	5
2		"	12-19-36	25	9
1	Muscalis	"	12-21-36	25	10
1		"	12-22-36	25	11
1		"	12-23-36	25	11
	Muscalis	Buji	1-2-37	25	16
	"	"	1-4-37	25	18
	levipes	Rona	1-19-37	26	1
2	"	"	1-21-37	26	2
2		Iteki	1-24-37	26	3
1		"	1-26-37	26	4
2	levipes	"	1-26-37	26	4
1	"	Sogeri	1-30-37	26	7
	"	"	1-31-37	26	7
3	"	"	2-2-37	26	9
1		"	2-2-37	26	9

Murid

1		Tarara	12-21-36	25	10

Myotis

Sp.		Loc.	Date	Letter	Page
2		Tarara	12-19-36	25	10
?) 1		"	12-22-36	25	11

Nyctimene

1		Palmer J. 5 mi.	5-20-36	17	3
2	♀	"	5-24-36	17	6,7
1	♀	"	5-24-36	17	7
1		"	5-25-36	17	8
several		"	5-26-36	17	9
2		"	5-27-36	17	10
1		Palmer and Black	6-22-36	19	3
3		" "	6-23-36	19	3
1		" "	6-28-36	20	2
1		" "	6-29-36	20	3
1 living		" "	7-31-36	21	28

Nyctophilus

?)	Microtis	Sogeri	1-31-37	26	8

Peroryctes (Bandicoot)

1		Palmer and Black	7-?-36	21	20
1		Mabion	7-?-36	21	28
?) 1		Sturt Is. C.	10-23-36	24	14

Petaurus (Flying squirrel)

	Sp.	Loc.	Date	Letter	Page
1		Tarara	12-9-36	25	4
1		"	12-10-36	25	4
1	♀	"	12-10-36	25	4
1	(baby)	"	12-10-36	25	4
1		"	12-13-36	25	6
2	♂ and ♀	"	12-22-36	25	11
2		Tarara	12-24-36	25	12
1		Büji	1-1-37	25	15
		"	1-3-37	25	17
4		"	1-4-37	25	18
1	p. papuensis ♀ (?)	Itiki	1-26-37	26	5

Flying Phalangers

2		Tarara	12-12-36	25	5

Phalanger (opossum) (spotted cuscus)

1		Rona Falls	2-14-36	9	6
1	maculatus ♀	Mabaduane	4-28-36	14	5
1	"	"	4-22-36	14	5
1		Palmer and Black	6-22-36	19	3
1	♂	" "	7-25-36	21	23
1		Mabion	7-?-36	21	28
2	(1 ♀)	Oroville Camp	8-10-36	21	35
11	maculatus	L. Daviumba	8-21-36	23	3
2	" (alive	"	8-21-36	23	4
?		"	8-23-36	23	4
1	♂	"	8-25-36	23	5,6

	Sp.	Loc	Date	Letter	Page
1	♂	L. Daviumba	9-16-36	23	13
1	♀ (1 young)	" "	9-8-36	23	14
1		" "	9-10-36	23	14
1		Sturt Isl. C.	10-21-36	24	13
2	Maculatus ♂ and ♀	" " "	11-27-36	24	15
3	"	Tarara	12-21-36	25	10
		Phascolage			
1		Palmer J. 5 mi.	6-1-36	17	14
1		Mabion	7-?-36	21	28
1	tupara (?)	L. Daviumba	8-19-36	23	2
1	- (brown)	" "	8-22-36	23	3
?		" "	8-23-36	23	4
1		" "	9-2-36	23	10
2	♂ and ♀	" "	9-4-36	23	11
5	2♂ and 3 ♀s (1 with young)	" "	9-5-36	23	11
4		" "	9-7-36	23	14
4		" "	9-8-36	23	14
1		" "	9-9-36	23	14
2		" "	9-11-36	23	15
1		" "	9-12-36	23	15
3		" "	9-17-36	23	19
2		" "	9-18-36	23	20
3		" "	9-19-36	23	20
4		" "	9-24-36	23	22
1		" "	9-28-36	23	23
1		" "	9-29-36	23	24

Phascogale continued

1			Sturt Isl. C.	10-27-36	24	15
2		♂	Tarara	12-7-36	25	3
1			"	12-8-36	25	3
1			"	12-9-36	25	4
1			"	12-11-36	25	4
1			"	12-14-36	25	6
1			Buji	1-4-37	25	18
1		♂	Rona	1-20-37	26	1
1	melanura		Itiki	1-24-37	26	3
1	"		"	1-26-37	26	4
			Sogeri	2-1-37	26	6, 8

Philander

1						
2	maculatus		Fly R. (?)	5-8-36	16	6

Pipistrellus

1			Daru	2-27-36	10	10
2			"	2-29-36	10	12
5			" (skull only in Formalin)	3-29-36	12	7
1			Mabaduans	4-20-36	14	4
1			"	4-23-36	14	5A
1			Tarara	12-6-36	25	3
1			"	12-11-36	25	4
1			"	12-15-36	25	6
2			"	12-19-36	25	9
1			"	12-19-36	25	10
			Sogeri	1-30-37	26	7

Pogonomys

1	♀ (2 young)	Palmer J. 5 mi.	6-2-36	18	1
1	(2 embryos)	Palmer and Black	7-2-36	21	1
3		Oroville Camp	8-10-36	21	35
1	lepidus ♀	Sogeri	1-30-37	26	6

Pseudochirus

1		Itiki	1-26-37	26	5

Pteropus

1		Daru	3-7-36	11	1
1	♂	Palmer and Black	7-30-36	21	26
3	2♂, 1♀	Belvis Oroville	8-15-36	21	36
1		L. Daviumba	9-16-36	23	17
2		Sturt Is. C.	10-13-36	24	7
		" " "	10-28-36	24	16
1		Bijji	1-3-37	25	17

Rattus

5	mordax	Rona Falls	2-15-36	9	6
1	"	" "	2-16-36	9	7
2		" "	2-17-36	9	8
1	brachyrhinus	Daru	2-18-36	10	11
1	(black)	"	2-28-36	10	11
1	brachyrhinus	"	3-2-36	10	12
2	"	"	3-3-36	10	13
5	"	"	3-4-36	10	14
1	"	"	3-5-36	10	14

	Sp.	Loc.	Date	Letter	Page
2	brachyrhinus	Daru	3-6-36	10	15
5	"	"	3-7-36	10	15
4	"	"	3-8-36	11	1
2	"	"	3-9-36	11	2
2	"	"	3-10-36	11	2
2	"	"	3-11-36	11	2
2	"	"	3-12-36	11	3
1		"	3-13-36	11	3
2	brachyrhinus	"	3-15-36	12	1
1	"	"	3-17-36	12	2
2	" (1♂, 1♀)	"	3-18-36	12	2
1	"	"	3-19-36	12	2
?	"	Old Mawatta	4-10-36	13	3
?	ringens	" "	4-10-36	13	3
3	"	Mabaduane	4-16-36	14	2
1	brachyrhinus	"	4-16-36	14	2
2	ringens	Mabadrane	4-18-36	14	3
1	brachyrhinus	"	4-18-36	14	3
4	ringens	"	4-19-36	14	4
1	brachyrhinus	"	4-20-36	14	4
1	"	"	4-21-36	14	4
1	ringens	"	4-21-36	14	4
2		"	4-22-36	14	5
2		"	4-23-36	14	5A
?		Palmer and Black	6-16-36	18	12
1		" "	6-21-36	19	12

No.	Doc.	Date	Letter	Page
2	Dreadnought	Sierra	3-3-36	10
3	"	"	3-7-36	10
4	"	"	3-9-36	11
5	"	"	3-9-36	11
2	"	"	3-10-36	11
2	"	"	3-11-36	11
2	"	"	3-12-36	11
1		"	3-13-36	11
2	Dreadnought	"	3-16-36	12
1	"	"	3-17-36	12
2	" (10, 10)	"	3-18-36	12
1	"	"	3-19-36	12
2	"	Via Marietta	3-20-36	13
2	Ringens	" "	3-20-36	13
2	"	Ambulance	4-10-36	13
1	Dreadnought	"	4-18-36	13
2	Ringens	Ambulance	4-18-36	14
1	Dreadnought	"	4-18-36	14
4	Ringens	"	4-19-36	14
1	Dreadnought	"	4-20-36	14
1	"		4-21-36	14
1	Ringens	"	4-21-36	14
2		"	4-22-36	14
2		"	4-23-36	14
2		Palmer and Bason	5-10-36	15
1		" "	5-21-36	15

	Sp.	Loc.	Date	Letter	Page
1	mordax (?)	Oroville Camp	8-9-36	21	34
1		" "	8-10-36	21	35
2	(♂, ♀)	Below Oroville C.	8-15-36	21	36
?	brachyrhinus ♀	L. Daviumba	8-20-36	23	2
1	"	"	8-21-36	23	3
1	"	"	8-23-36	23	4
1	brachyrhinus ♀	"	8-24-36	23	5
1	"	"	8-25-36	23	5
1	"	"	8-28-36	23	8
3	"	"	8-29-36	23	8
6	"	"	9-2-36	23	10
1	"	"	9-4-36	23	11
4	"	"	9-5-36	23	11
4	"	"	9-7-36	23	14
1		"	9-8-36	23	14
2	brachyrhinus	"	9-9-36	23	14
4	"	"	9-11-36	23	15
1	ringens	"	9-14-36	23	16
5	brachyrhinus	"	9-17-36	23	19
1		"	9-18-36	23	20
1	brachyrhinus	"	9-19-36	23	20
4		"	9-24-36	23	22
3	brachyrhinus	"	9-29-36	23	24
?	(8 spp.) ringens)	Sturt Is.	10-8-36	24	3
1		" "	10-9-36	24	4
2		" "	10-10-36	24	6
		" "	10-11-36	24	6

Sp.	Loc.	Date	Letter7	Page
	Sturt Is.	10-13-36	24	7
4 Ringens	" "	10-18-36	24	12
	" "	10-25-36	24	15
1	" "	10-25-35	24	15
4	" "	10-30-36	24	17
4 brachyrhinus	Tarara	12-4-36	25	2
1 ringens	"	12-4-36	25	2
brachyrhinus	"	12-5-36	25	2
"	"	12-6-36	25	2
ringens	"	12-6-36	25	2
4 "	"	12-7-36	25	3
6 brachyrhinus	"	12-7-36	25	3
4 "	"	12-8-36	25	3
9 ringens	"	12-8-36	25	3
4 "	"	12-9-36	25	4
1 brachyrhinus	"	12-9-36	25	4
3 ringens	"	12-10-36	25	4
1 brachyrhinus	"	12-10-36	25	4
2 "	"	12-11-36	25	4
4 ringens	"	12-11-36	25	4
2 "	"	12-12-36	25	5
1 brachyrhinus	"	12-12-36	25	5
1 "	"	12-14-36	25	6
2 ringens	"	12-14-36	25	6
13 ringens	"	12-15-36	25	6
11	"	12-16-36	25	6
2	"	12-17-36	25	7
8 "	"	12-18-36	25	8

	Sp.	Loc.	Date	Letter	Page
1	brachyrhinus	Tarara	12-18-36	25	8
3	ringens	"	12-19-36	25	9
6	"	"	12-20-36	25	10
4	"	"	12-21-36	25	10
2	"	"	12-22-36	25	11
7	"	"	12-23-36	25	11
	brachyrhinus	Buji	1-2-37	25	16
	"	"	1-4-37	25	18
	mordax	Rona	1-19-37	26	1
2	"	"	1-20-37	26	1
	(mordax (brachyrhinus (near praetor	"	1-21-37	26	2
2	(mordax (praetor	Itiki	1-24-37	26	3
2 1	(mordax (praetor	"	1-26-37	26	4
2 2	(mordax (praetor	"	1-27-37	26	5
1 3	(praetor (mordax	Sogeri	1-29-37	26	5
	(praetor (mordax	"	1-30-37	26	6
	(mordax (praetor	"	1-31-37	26	7
3 2	(praetor (mordax	"	2-1-37	26	8
4	praetor	"	2-2-37	26	9
	New (?) genus of mice				
1		Fairfax Is.	10-4-36	23	26, 27
	Rats				
1	No. 3435	Itiki	1-24-37	26	3
1	Same	Sogeri	2-1-37	26	8

May be Stemomys verecundus.

Rhinolophus

	Sp.	Loc.	Date	Letter	Page
4		Palmer J. 5 mi.	6-2-36	18	1
(?) 2	(2 spp. (2990, 2991	Sturt Is. C.	10-14-36	24	10
(?) 2		" " "	10-15-36	24	10
(?) 2	♂ and ♀	Tarara	12-5-36	25	2
1	♂	"	12-16-36	25	7
(?) 1		"	12-23-36	25	11

Flying Squirrel

1		Tarara	12-13-36	25	6

Uromys

1	Rona Falls	Rona Falls	2-17-36	9	8
1		Dogiva	4-4-36	13	2
1		Palmer J. 5 mi.	5-31-36	17	14
1		Palmer and Black	6-14-36	18	10
?		" "	6-16-36	18	12
1	♂	" "	6-25-36	19	5
1		" "	7-2-36	21	1
1		L. Daviumba	8-19-36	23	2
1		" "	8-24-36	23	5
1		" "	9-15-36	23	17
1		Sturt Isl. C.	10-8-36	24	3
1		" "	10-10-36	24	6
		" "	10-11-36	24	6
1		" "	10-15-36	24	10
1		" "	10-23-36	24	14
		" "	10-24-36	24	15

	Sp.	Loc.	Date	Letter	Page
3		Sturt Isl. C.	10-25-36	24	15
1		" "	10-27-36	24	15
		" "	10-28-36	24	16
2		" "	10-31-36	24	17
1		" "	11-2-36	24	19
1	(3114 ?)	" "	11-3-36	24	20
1		Tarara	12-13-36	25	5
1		"	12-15-36	25	6
1		"	12-18-36	25	8
1		Buji	1-1-37	25	15
1		Rona Falls	1-21-37	26	2
		Zaglossus (spiny anteater)			
2	♂, ♀	Mabaduane	4-24-36	14	5A
2		L. Daviumba	9-19-36	23	20

FIELD JOURNAL? G.H.H.TATE? ARCHBOLD 1936 NEW GUINEA EXP.

Daru. Feb. 27, 1936. Thursday. This page commences the general and field notes of G. H. H. Tate, of the advanced party of the expedition. A synopsis of movements of the party is first offered:

Left Los Angeles January 8. Arrived Sydney January
Left Sydney Arrived Port Moresby
Spent three days at Rona Falls collecting and getting generally acquainted with the Astrolabe Mountain country.
Left Port Moresby Feb. 20 Arrived Daru Monday Feb. 24.

On the evening of our dining with Dr. Vernon he told us several amusing and interesting stories of his recent visit to Japan and Formosa, and how in the latter place he was invariably escorted by the police from village to village. Wilson, skipper of the Veimauri had also been invited. He, Vernon and I tried our hands at the piano, which is somewhat the worse for weather.

Tues. Feb. 25. Devoted to sorting out stores and getting the big cases up and stowed away under the house. The boys reported bats in under the leaves of a coconut nearby which Rand shot (four) all females. They proved to be Dobsonia and may be the same as the species recently described by Glover Allen from Queensland. None was in breeding condition. I skinned them out in the afternoon and then we attended a little teaparty at Dr. Vernon's house where we met Mr and Mrs Woodward (he is R. M. for the district), Mr. and Mrs. Leydon (he is customs man), Mr. Schlenker (missionary). In the evening I picked up a few moths at the gasoline light.

Wed. Feb. 26. More sorting of stores. I got my 6ft by 6ft by 6ft skinning tent erected. It is made of mosquitonet and is designed to keep off flies and mosquitos so that I can skin specimens in peace, no matter how "high" they may have become.

In the afternoon put up the bat net. It is very delicate and easily tangled up and requires a great deal of patience and finesse to get it properly adjusted. Went afterwards with Beach to see his "farm", about a mile and a half out of town along the one road of the island which crosses from side to side. He has a number of cows, two horses, nine young ducks and some older ones, a lot of hens, about four dogs, and feeds them almost entirely on a mixture of corn and shredded coconut. He is growing a few tomatos and beans, and off to the southeast about two hundred yards has a large garden in which a number of native vegetables and bananas and pawpaws seem to do exceedingly well. Diredtly behind Beach's farm is a big coconut grove belonging to Maidment (the man who owned a radio set until recently). A short quarter mile south of Beach's is Dr. Vernon's place where he growing an experimental 40 acres of kapok trees.

Rand started the boys clearing off a patch of ground on which we shall be able to beach the "Kono" our flying boat. When I got back from Beach's I took a walk down there (the tide being out) and found that practically the whole 'tween tides expanse to be of relaively level rock. The rock appears to be sedimentary in origin, a coarse, gritty shaly sandstone which however contains some rounded pebbles and also unrounded material perhaps a quarter of an inch in size. The laminations vary, some being quite fine and others of coarse material. In addition there are inclusions, usually quite round that seem to to represent bowlders, or perhaps even filled and cemented potholes. Some have resisted erosion better than the matrix and stand out as rounded eminences.

FIELD JOURNAL: S.W.P. PATT. ARCHBOLD 1938 NEW GUINEA EXP.

Darw. Feb. 27, 1938. Thursday. This page commences the general and field notes of O. H. H. Tate, of the advanced party of the expedition. A synopsis of movements of the party is first offered:

left Los Angeles January 6. Arrived Sydney January
left Sydney Arrived Port Moresby
Spent three days at Rona Falls collecting and getting generally acquainted with the Australian Mountain country.
left Port Moresby Feb. 20. Arrived Darw Monday Feb. 24

On the evening of our dining with Mr. Vernon he told us several amusing and interesting stories of his recent visit to Jan Mayen Island, another in the latter place, he was invariably escorted by the police like a little village. Wilson, skipper of the Velsheard has also been invited to Vernon and I dined one night at the Vicar, which is somewhat the worse for wear.

Tues. Feb. 25. Devoted to sorting out stores and getting the big cases up and stored away under the porch. The boys rounded up in under the leaves of a coconut nearby which had shot (from) all females. They proved to be Podocnis are may be the same as the species recently described by Oliver Allan from Queensland. Mode was in breeding condition. I released them out in the afternoon and then we attended a little bee party at Mr. Vernon's house where we met Mr and Mrs Woodward (he is A. M. W. for the district), Mr. and Mrs. Beyson (he is customs man), Mr. Sonlender (missionary). In the evening I picked up a few moths at the gasolene light.

Wed. Feb. 26. More sorting of stores. I got my bed by 8 by 8 mounting tent erected. It is made of mosquitonet and is designed to keep off flies and mosquitos so that I can sleep in peace, no matter how "high" they may have become.

In the afternoon put up the bed net. It is very comfortable and easily taken up and requires a great deal of pegging and fiddling to get it properly adjusted. Went afterwards with Beach to see his "farm", about a mile and a half out of town along the one road of the island which crosses from side to side. He has a number of cows, two horses, nine young ducks and some other ones, a lot of hens, about four dogs, and feeds them almost entirely on a mixture of corn and shredded coconut. He is growing a few tomatos and beans, and off to the northeast about two hundred yards has a large garden with a number of native vegetables and bananas and papaws seem to be succeeding well. Directly behind Beach's farm is a big coconut grove belonging to Maidment (the man who owned a radio set until recently). A quarter quarter mile more south of Beach's is Mr. Vernon's place where he is growing an experimental 10 acres of jaqua bean.

Hand started the boys clearing off a patch of ground on which we shall be able to beach the "Honey" our flying boat. Then I got back from Beach's I took a walk down there (the tide being out) and found that practically the whole lower idea appears to be of relatively level rock. The rock appears to be sedimentary in origin, a coarse, gritty sandy sandstone which however contains some rounded pebbles and also numerous material resembling a number of an iron in size. The limestone varies, too, below quite like an otherwise of coarse material. In addition there are isolations, usually quite round that seem to be represent boulders, or pebbles even filled and deserted potholes. Some have leaf or moler better than the matrix and stand out as rounded eminences.

All of the matrix rock is greatly decayed, presumably through the action of seawater, but the boys are now engaged in getting out rock to fill in parts of the air base, so I hope that I may be able to secure some samples of material showing less alteration. The sediments seem to strike more or less east and west, and to dip very slightly (about 5 degrees) towards the north (ie towards the water front.

Back at the house, after we had cleaned up, we had Beach, Vernon and Maidment drop in for a chat and a few drinks. About 7 oclock I went over to Beach's yard to try for some little bats which we had seen flying there the previous evening. Got three shots off but hit no bats.

Thursday, Feb. 27, 1936. This a.m. baited up 30 traps and took them out to Beach's farm. Set 20 in old garden, 5 in bamboo clumps between the garden and Maidment's coconut grove, and 5 more in among the coconuts proper.

Yesterday evening several turtles were brought in. One, badly diseased, apparently from an old harpoon wound was offered to Rand who wouldn't buy it. A good specimen was then brought. Yet another was bought by our boys collectively for a few sticks of tobacco. They then proceeded to butcher it in various unpleasant ways, which included fire, knives and axes.

Last night about 9.30 p.m. we found a little Macroglossine bat tangled up in the newly erected bat-net. It had made quite a big hole already. And going out half an hour later I found another hole but no bat.

Beyond Maidment's coconuts a path leads right out into mangrove scrub. Very wetm muddy and mosquitoy, but I'll have to do some invertebrate collecting there. I noted a number of small crabs and other thing during the short time I w was in there. Afterwards took trail directly opposite entrance to Beach's, which leads through Tea-tree and Eucalyptus bush, i.e. the park-like type of forest which lets a great deal of light through to the ground. Found it very hot, and rather unattractive from the point of view of colleting mammals. Saw Vernon the road back. He reminded me that we are expectd to tea at his kapok plantation tomorrow afternoon.

Brass went also collecting in mangrove swamps. He got one thing new to him. He also brought me in a couple of dozen marine slugs that look like Triton, but without shells. They were concealed about the roots of the mangroves.

Beach told story of witch doctor and mysterious bark whose effect on dancing natives was to make them believe themselves dancing in the air, whereas actually they were down and out on the floor. Witch doctor then rolled them overa few times with his foot, whereupon they jumped up "loco" and ran, bumping into trees and anything in their way. They came to in a quarter of an hour or so and told Beach what their sensations had been.

About 3 oclock took Aula with 30 traps and went out towards the mangrove clump half a mile to the east from here. First however I set ten around the base of the "hill" in a mixture of long grass, coconut palm and banana just east of where the aeroplane landing station is being built. The first half of the way to the mangroves (at low tide) is mostly over rock, but the second part is over moderately consolidated mangrove mud, which becomes less and less consolidated the farther you go. Mangroves five years ago filled the entire space, according to Woodward. But they have ben cut away systematically so that only tall stumps now remain until the above mentioned patch is reached. Remembering the two records of Hydromys being shot under jacklight on open seabeaches, it seemed to me possible that they might swim freely among the mangroves and the remaining stumps. Accordingly I set fifteen traps on the tops of the tallest stumps and five more on stumps along the outer fringe of the patch of tall mangrove trees remaining. I could not determine however whether the high tide will cover the traps or not. On way out saw white headed kingfisher; Periophthalmus; a number of interesting looking crabs. Coming back I secured samples of the coarse and fine sedimentariess as well as examples of the large pieces of included rock, which on examination will probably turn out to be some kind of quartz (perhaps chert).

All of the rattle rock is gradually decayed, presumably through the action of seawater, but the boys are now engaged in getting out rock to fill in parts of the air base, and I hope that I may be able to secure some samples of mangrove showing land alteration. The sediments seem to strike more or less east and west, and to dip very slightly (about 5 degrees) towards the north (ie towards the water front).

Back at the houses, after we had cleaned up, we had Brown, Vernon and Maidment drop in for a cast and a few drinks. About 7 o'clock I went over to Beach's place to buy for some little bats which he had been flying were the previous evening. Got three skins off but bit no bats.

Thursday, Feb. 27, 1930. This a.m. hailed up 30 Kanaps and took them out to Beach's farm. Set 20 in old garden, 6 in bamboo clumps between the garden and Maidment's cocoanut grove, and 4 more in among the cocoanuts proper.

Yesterday evening several turtles were brought in. One, badly diseased, apparently from an old harpoon wound was offered to Hand who wouldn't buy it. A good specimen was then bought. Yet another was bought by our boys collectively for a few sticks of tobacco. They then proceeded to butcher it in the unpleasant way, which included axes, knives and saws.

Left eight at 3.30 p.m. We found a little Mo quarrelling but tackled up in the heavy rain and left-but. He had made quite a big row already. And going out half-way to Hand's we found another little Mo on foot.

Beyond finding that a coconut a day keeps a sick-out in mangrove swamp very warm muggy and mosquitoy, not much have to do some investigate collecting there. I made a number of small crabs and also taking during the afternoon time I was in there. Differences look small, firmly opposite entrance to Beach's, which I did through Tea-tree and Tooth-ache bush, i.e. the park-like type of forest which lets a great deal of light through on the ground. Sound is very dull and rather unnatural from the point of view of collecting mammals. Saw Vernon on the road back. He realised the kind we are expected to deal at the Bonin Distribution conference at Tokyo.

Boys went also collecting in mangrove swamp. Are not sure yet how to use. Heard from me in a couple of days writing since that Jack Little Triton, but without success. They are concealed about the roots of the mangroves.

Beach told story of a Jap doctor and prostitute bank was where effect on dancing maidens was to make them believe themselves floating in the air, meaning actually they were lying on the floor. Night doctor then rolled them overan ten times with his foot. Whereupon they jumped up "Good" and ran, bowing into bread and anything in order way. Then came to a number of and now so one told Beach man doctor concerned had been.

About 3 o'clock took Mia with 30 traps and went out towards the mangrove about mile to the south from here. First however I got ten around the base of the "hill" in a mixture of long grass, coconut palm and in the just east of where the aeroplane landing station is being built. The first half of the way to the mangroves (at low tide) is mostly over rock, but the second part is over moderately consolidated mangrove mud, which becomes less and less consol. as the farther you go. Mangroves five years ago filled the entire space, according to Hotaka, but they have been cut away gradually as that only hill stumps now remain until the above mentioned patch is reached. Remembering the two records of Hydromys being found under logs at open beaches, it occured to me possible that they might have lived among the mangroves and the remaining stumps. Accordingly set Kanaps traps on the tops of the tallest stumps and five more on stumps along the outer fringe of the patch of tall mangrove trees remaining. It could not determine however whether the high tide will cover the traps or not. On way out saw white necked kingfisher; Porphyrulus; a number of intermediate looking waders, coming first I found samples of the coarse and fine sediments. Left on way back some of the large pieces of lichen rock, which on examination will probably turn out to be some kind of quartz (perhaps agate).

This evening Mr. and Mrs. Woodward came down for "cocktails"(equals rumand water actually). We talked of various matters. He has been out in New Guinea for many years; she for seven. He had a station up the Sepik River in the Mandated Territory the other side of the island from here, and it was while they were there that she caught black-water fever.

About 7 ock I heard Beech calling me to say that bats were flying. My shooting was none too good but I got one which turned out to be a Pipistrellus.

For supper tonight we had first chicken stew and then turtle steaks from the turtle which Rand has been working on most of the day. It is known locally as the Green Turtle.

Friday, Feb. 28. In Beech's garden took a large skink and one specimen of my newly described Rattus brachyrhinus. Drove out to see th traps with Beech in his Ford. Sent Aia out to see the mangrove line. He found a black rat around the base of the hill, and far out among the mangroves he discovered a Varanus lizard about a foot and a half long.

This afternoon we were invited to "tea" at Dr. Vernon's farm. Beech drove us out to his place and Vernon's is merely a few hundred yards beyond. A little rustic bench and table under clumps of bamboo represented the picnic place; and we had tea, "damper" (bread made in a fryingpan), butter and jam amid the attacks of perfect hords of mosquitos. Afterwards Vernon took us around to his plantation of baby kapok trees (tree-cottons). The biggest of them does not yet reach four feet, and the smallest is about one foot. Besides those planted out already he has quantities of seedlings still in boxes. The weeds grow at an infernal rate here, though, and it seemed to me a pretty hopeless job to try to establish such a plantat on with the little help he has. Besides kapok he showed us Ricinus, papaya, Eugenia (with pulpy fruit growing in sprays all up the trunk). I took my net along and Rand his gun. Several interesting butterflies and day-flying moths were netted.

On our return I found that Aia whom I had sent out rebait traps had brought back four skinks. The skinks apparently like our combination bait better than rats do. A boy came along shortly afterwards and offered Rand a tame, immature hawk, apparently the same bird that I have twice seen along by the mission, and said to belong there.

At Vernon's found a number of fat yellow "looper" caterpillars, gregarious on a shrub or young tree which Brass could not identify. On the yellow ground color they were speckled with black in definite pattern. The legs were reduced to the 3 pairs in fround and 2 behind of the Geometridae but they looked far toofat and heavy to be "Geos". However one had spun up in a leaf and formed a thick heavy Hesperid-like chrysalis which I have brought back and hope to have hatch out later.

Saturday, Feb. 29. Ran trapline at Beech's place. Took a small Melomys, a very large skink and three frogs. Aia went round the mangrove sets and brought back only house rats, several of them however.

While waiting for Beech to finishing milking and running his milk separator I walked on through the main road to the other (south) side of the island. The Road three parts across goes over a strip of mangrove swamp about 200 yards across. It ends up at wretched fishing village of about ten or a dozen houses and some 50 inhabitants who seem to live in a dense cloud of mosquitos.

The same rock appears there, coarse and finely banded shaley sandstones with similar inclusions, some of them very large, about a yard in diamieter. But the dip of the rocks is slightly but unmistakably to the south instead of to the north as on this side. These opposite dips in what appears t be otherwise unfolded rocks, added to the lateritic ironstone that occours on the slightly elevated land at Beech's, Dr. Vernon's and even here on the "hill" at Daru proper leads me to suspect that we have to deal with a small dome, the upthrusting of which forced iron out to the near surface where it became weathered into the laterites.

Saturday, Feb. 27. Ran dredging at Beech's place. Took a small Melomys, a very large skink and three lizards. We went round the mangrove sets and brought back only house rats, several of them however.

While waiting for Beech to finishing milking and running his milk separator I walked on through the main road to the other (south) side of the island. The road three parts across open overseas strip of mangrove swamp about 200 yards cross. It ends up a rock some 50 inhabitants who

The same rock appears the inclinations, some of the rocks is slight on this side. The ks, added to t at Beech's,

This afternoon I took Aia and some seventy traps and drove out with Beech to his farm. I had previously arranged with Vernon to let me take a cot andmosquito net out to his place so that when I felt so disposed I could stay on there for the night. I have reached the conclusion that Beech's and V rnon's places offer about the best trapping possibilities on Daru Island. With this last lot of traps I began at the back corner of Maidment's where the coconut sets are and traveled along the scrubby belt, partly mangrove, behind Beech's and Vernon's sections well into the latter. There were still 15 small traps to be set when I came out to fiind out just where I was. Did not go back to set the rest but went up to Vernon's house and across back to Beech's where I found him transplanting Chinese cabbage.

In the trap line I set the first forty traps (all rat size) on the ground in suitable places (there is some very dense long grass in open spots), and the rest (all small mouse traps as tree sets. Saw signs of feral pigs in the scrub.

Sunday, Mar. 1. The new trapline was rather disappointing. Went out early with Beech before sun-up, a lovely salmon colored sunrise. B. presented me with a drink of fresh milk and a couple of apples (the latter not grown here).

Back along the trapline the mosquiotos were waiting in vast quantities for me and made the most of their opportunities as usual. The only creature in the traps was another skink.

Last night just at dark two boys from the village brought in a couple of Pipistrellus bats which they said they had secured by whipping a stick back and forth in the air over on the avenue which is lined with big mango trees.

Sunday is the day when the "boys" receive their week's special rations: tinned meat, tea, sugar, salt, etc.; there is a daily ration of rice, peas, and soforth.

In the afternoon sent Aia out to rebait; and I set another twenty rat traps around the dense lines of weeds between his rows of kapok. Heavy rain came on in the middle of things and I went up ot the house to let it pass and finished the job afterwards.

The view from the high porch of our house is pleasant and interesting: Straight in from and from side to side the two-mile wide straight stretches, and beyond it the mangrove fringed coast of the mainland of South New Guinea. Our house lies nearly a hundred yards back from the beach and on a slight rise, so that from the veranda we can overlook everything. The space between house and shore is grassy field, with a few rows of quite young coconuts planted immediately behind the wooden sea-wall. Over on the left side of our fieldis the small corrugated iron shed where the "boys" are housed; and beyond it can be seen the long jetty, built far enough out into the channel to allow shallow (very) draft boats to come in to it at low tide. On the right the open-spacing of the stems of a grove of old coconuts allows ample view down the channel to the east. As I write it is close upon sun-set; the boys keep up a constant chattering at the "boy house", a chattering which is pleasantly modulated by distance. All day long they have been singing to celebrate Sunday, mostly 'John Brown's Body...' over and over again. Truly the Missions at the eastern end of New Guinea have made the most of their chances. A boy has just left the "house" with two old 5-gallon kerosine cans, shich serve as water pails; and away out at the edge of the receding tide a lad in a red "rami" (skirt) is poking around in the nearly rippleless water for shell fish or crabs. Overhead big martins are diving and wheeling around picking of gnats or midges.

Monday, Mar. 2. The fauna here is undoubtedly thin. With complete rebaiting yesterday of the old line and the additional twenty which I put down myself, only three specimens were secured. One Melomys muscalis had the skin so badly damaged that I could not make it up, a Rattus brachyrhinus was considerably damaged by ants, and the third, a young animal of the same species was so bad that I had to throw it away. The worst offender of the ants is one which covers the trapped animal (or merely the bait) with particles of soil and works under cover, but another rather larger black ant, which makes no shelter at all, is nearly as bad.

[illegible]

After skinning out the rats I had Aia help me straighten out the bat net and shift it over into Beeach's yard. In the afternoon I sent him out rebait while I got another twenty traps ready and took them out to Vernon's farm. Incidentally I checked up on the thoroughness of Aia's work and found it to be good. Getting back to Beech's farm from the Doctor's place (they are contiguous, as the sketch map shows, I found Beech and Rand who had accompanied us out, ready to leave. Out in the main road we ran over a black snake about a yard in length, which it seems is called a Brown Snake. Got back just ahead of a heavy shower which no doubt spoiled all our bait more or less. A "boy", who is Mission Schoolteacher came in and offered me a lot of long-dead, badly battered moths that I had to decline. He wants to collect for us however, and I strongly suspect that he will use the school children to get things. He says his name is Sampson And he had with him an old number of the National Geographic in which insects were featured many in color. His idea was that I should pick out the ones that I particularly desired. However I just told him to bring everything I also showed him how to put them up in papers. He is going to give the matter a trial of a couple of weeks and then bring in the spoils for inspection and comments.

The bat net caught a small dove for us tonight which we released however because it is a very common species and Rand has taken it often before.

Tuesday, March 3. Took Aia out with me at 6 a.m. in Beech's car so that I might check up on his memory of where the trap line runs and so that I might show him the positions of forty more traps. Took a green frog, a very large skink, two smaller skinks, a rail, two Rattus brachyrhinus, and two Melomys muscalis.

On getting back to headquarters I found that the police had a force of prisoners out cutting the grass in our field with machetes.

Skinned out specimens. Showed Aia how to put boot screws in boots, then had him straighten out the bat net and extract a very large beetlw which had entangled itself retty badly. Took a few photograph s of the village and the preparation of the aeroplane flat which is now nearly an acre in extent and should serve admirably to beach, turn and service the 'plane.

After lunch sent Aia out with twenty traps to set all by himself. This is the first time I have let him do the business entirely alone, and I shall go tomorrow with him to see where he located them and what he caught. At Dr. Vernon's I found Vernon himself spraying his kapoks. He had killed a snake which I took, and afterwards I took a track southwest from in front of the mission, which passes around a fenced native garden and bears around west through Eucalyptus savanna (i. e. through tall trees widely spaced and the intervening areas covered with long grass nearly head-high. The whole of the western edge of that savanna is bordered with what nearly approaches the gallery-woods of South America, only instead of fringing rivers, these forests appear to fringe true gangrove swamps.

While at Vernon's I took several pictures, one of a nest of tiny native bees which Brass had found that morning and placed on the picnic table. The bees were nesting in the tuberous base (a very large structure nearly as big as a small football) of a Hydnophytum (Rubiaceae), and in the same mass of plant structure was a nest of small brown ant. The ants and bees left eachother strictly alone neither transgressing the borderline of the others' nest.

Am planning to go out and sleep at Vern n's farm tonight if the weather is right. Will put on the jacklight and see whether I can spot any eyes. Have little hope of seeing anything, though. Tracks, which ought to show plainly on the muddy surface of the ground, have been entirely absent, excepting those of pigs.

I mentioned above that prisoners were out cutting our grass: Well a while later the police sergent (native) could be heard shouting out remarks from upethe hill at the police station. He continued talking

Walked out to Vernon's in the light of the half moon. Out jacklighting but saw only nighthawks, one of which I brought back.

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Walked out to Vernon's in the light of the half moon. Out jacklighting but saw only nightbawks, one of which I brought back.

Mar. 4, Wednesday. This morning getting up at dawn found Vernon's place simply alive with mosquitos. The traps yielded fairly well this morning: 3 adult and 2 young Rattus brachyrhinus, and 2 Melomys muscalis.

Last night Rand shot three Dobsonia. I quote part of his notes : "heard noise in coconuts which thought was flapping of wings... about 9 oclock ... moonlight decided to investigate... found flying foxes, 20 or 30 or more. Several were flying about, every now andthen attempting to light on a coconut frond, when the beating of their wings fanning the air and striking the fronds sounded very loud; occasionally one would give a low squeal. A light... showed three pairs of eyes gleaming red. A shot and flying foxes appeared from all the palms about, but not a movement from my tree. Flying foxes fluttering about the grove like huge moths. Finally three bats, 1 male, 2 female, fell from the tree I shot into. ... The bats were not feeding; perhaps resting, but sexes not segregated."

Last evening I was invited out to play "auction" with Mr and Mrs. Leyden and Dr. Vernon. Had rather poorer hands than average but no doubt they will even up some other time.

Thursday, Mar. 5. No rain last night and (not consequently) quite poor trap results: 1 Melomys muscalis and 1 Rattus brachyrhinus.

This morning took my second collecting-and-skinning boy. His name is Gororo. Decided to start both on skinning house rats several of which were brought in by a native policeman this morning. Only practice skinning of course. Aia at least who watched me yesterday is making out pretty well. He is taking the other one through the business step by step. This afternoon I shall send them out together to rebait, Aia again to act as instructor and show the new fellow where the traps are, how to bait them, and how to set them without catching his fingers.

Yesterday Brass and Rand borrowed Beech's canoe and went around the mangrove point to the east. I had a lot to do and did not go. Besides I had already walked there and did not expect to see anything especially new from the water.

This afternoon I went out to try to find the big swamp to the southwest of here but I got tangled up with a multitude of native gardens and criss-cross tracks so that I did not reach it. Took a number of insects new to the collection however. Crossed the road and went in to Vernon's place where we brewed some tea and then started back. The boy there said that he had heard a "boat engine", and we were just wondering what boat had come in, when Vernon's house boy came running up to say that the aeroplane had arrived. Doc. Vernon went in to take a shower and change his clothes before coming down to our place to see Archbold and the ship. And I passing Beech's house heard voices and jumped to the conclusion that Archbold was there. I found however that instead of the 'plane coming a small boat the "Aramea", captained by Capt. Dick Reynolds had come in. So the joke was on Doc. and me.

We are invited out to dine with Mr. and Mrs. Woodward this evening. He is the Regident Magistrate and arbitrator of the destinies the whole of Daru.

Rand went out for curlews along the shore this afternoon. In due couse a couple of shots were heard. The boys working at the aeroplane slipway all remarked "Pida boi-boi", which Brass translated as "the gun talks out loud".

The boys sing most of the time they are at work, a doleful and lugubrious chant but one is told that so long as they sing they are entirely contented.

Dr. Vernon told me little of his history. He was born in Sussex, England, but lived most of his life in Sydney, Australia. He Was general practitioner for many years in Western Queensland. Thn the War broke out and he went to Egypt with the medical corps of Australia and later to Palestine where he served with Allenby's troops against the Turks. When the storm blew over he Went into a plantaion undertaking with a partner in Northern Queensland. The depression pretty well ruined that business and he went back to medicine, building up a considerable practice on Thursday Island. Two years ago, I judge that he retired and came to Daru where he took up experimental planting which he is doing now.

Sat. 4. Saturday. This morning getting up at dawn found Vernon's place simply alive with mosquitos. The traps yielded fairly well this morning: 3 adult and young Little Brown Bats, and 2 Hairy Woodpeckers.

Last night and that three Tobacoula. I wrote part of his notes: "Heard noise in coconuts which thought was flapping of wings... about 9 outlook ... moonlight decided to investigate... Some flying foxes, 30 or 50 or more. Several were flying about, every now and then attempting to light on a coconut frond, when the beating of their wings jarring the air and striking the fronds sounded very loud; occasionally one would give a low squeal. A fight... two or three pairs of eyes glowing red. A shot and flying foxes dispersed from all the palms about, but not a move went from my tree. Flying foxes fluttering about the grove like huge moths. Finally three bats, 1 male, 2 female. Fell from the tree I shot two... The odd two not feeding; perhaps resting, but sexes not segregated."

Next evening I was left out to play "auction" with Jim and Mrs. Leyden and Mr. Vernon. Men rather poorer hands than average but no doubt they will even up out other time.

Thursday, Mar. 5. We rain that night and (not consequently) entire poor bag results: 1 Lesser Musselle and 1 Native Brown.

This morning took my second collecting-and-fishing boy. His name is Gorogo. Instead of a pair both of skinning house rats several of which were brought in by a native policeman this morning, only one other skinning of course. Ale at least who watches me perforce is making out pretty well. He is taking the other one through the business step by step. This afternoon I shall send them out together to rabit. Ale again to act as instructor and show the new fellow where the traps are, how to bait them, and how to set them without catching his fingers.

Yesterday afternoon and have borrowed Leech's canoe and went around the reef out to the east. Not a lot to do and did not go. Besides I had already walked there and distinct expect to see anything especially new from the water.

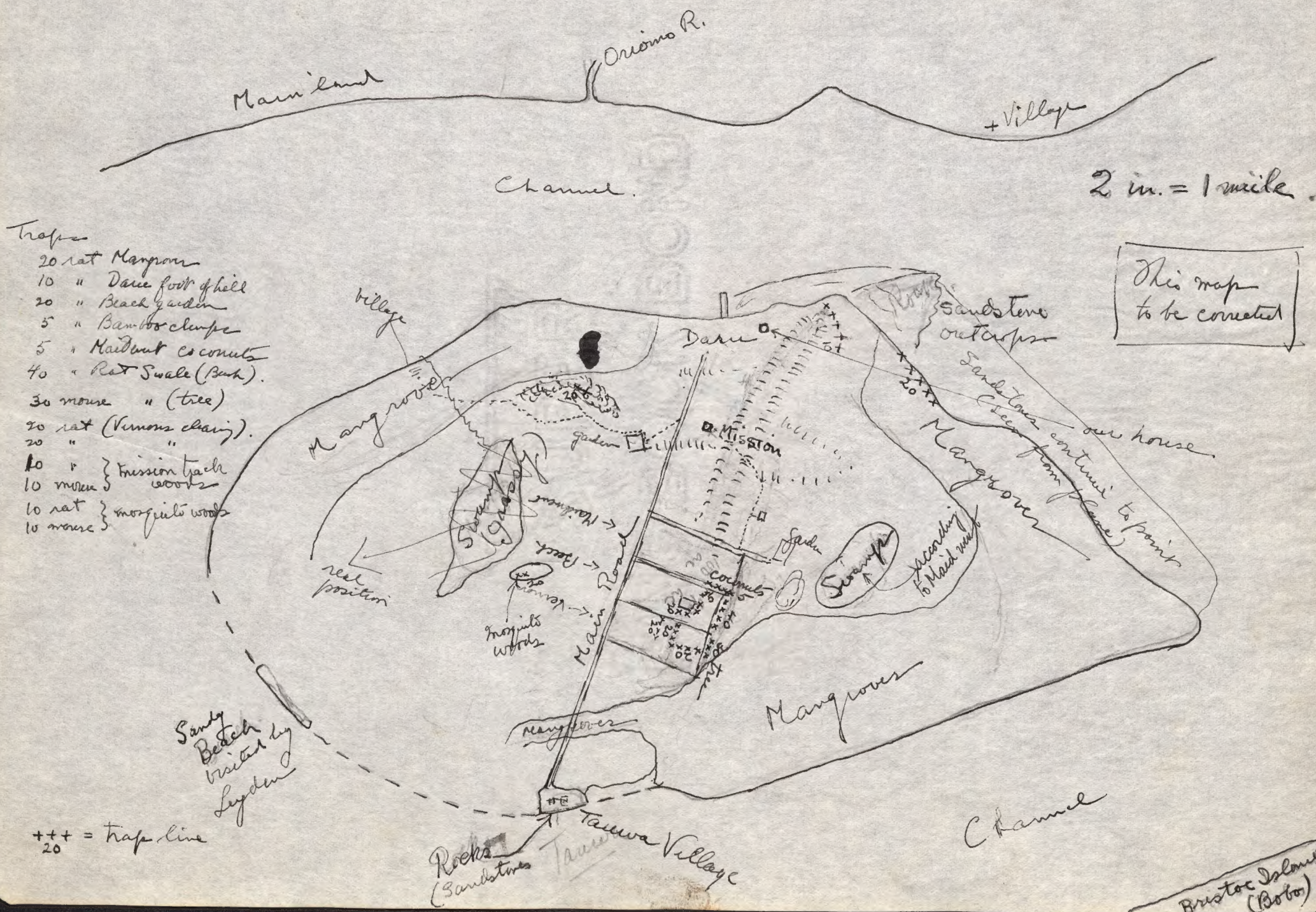
This afternoon I went out to try to find the big swamp to the southwest of here but I got tangled up with a multitude of native gardens and crisis-cross tracks so that I did not reach it. Took a number of insects for the collection however. Crossed the road and went in to Vernon's place where we treated ourselves to tea and returned back. The boy there said that he heard a "boat engine", and we were not wondering that boat had come in. Then Vernon's house boy came running up to say that the schooner had arrived. So, Vernon and Jim (Mrs.) showed and changed his clothes before coming out to our place to see Mitchell and the ship. And I passing Leech's house heard voices and jumped to the conclusion that Mitchell was there. I found however that instead of the pipe coupling a small boat the "Aramea", captained by Capt. Dick Reynolds had come in. Sure So the job was on too, and me.

We were invited out to dine with Mr. Jim. Wednesday this evening. He is the Resident Magistrate and principal of the Gazettes the whole of Ocean.

Had went out for cruises along the shore this afternoon. In one cove a total of shells were heard. The boys working at the sector was plainly all remarked "Pitch bot-bot", which Jimmie translated as "the gun talks too loud".

The boys sing most of the time they are at work, a solemn and lugubrious chant but one is told that so long as they sing they are actively occupied.

Mr. Vernon told me little of his history. He was born in Sussex, England, but lived most of his life in Sydney, Australia. He was general merchandiser for many years in western Queensland. When the war broke out he went to Egypt with the Australian Corps. Australia was later to Palestine where he served with Allenby's troops against the Turks. Then the storm blew over he went back to plantation under King Vitu's father in northern Queensland. The depression hit hard well muted that business and he went back to Australia, building up a coastal trade with headquarters on Thursday Island. Two years ago, I forget, he retired and came to Port de Bord to experimental planting which he is doing now.


Mainland
Oriomo R.
+ Village
Channel.
2 in. = 1 mile.
Traps
20 rat Mangrove
10 " Dare foot of hill
20 " Beach garden
5 " Bamboo clump
5 " Maidut coconuts
40 " Rat Swale (Bush).
30 mouse " (tree)
20 rat (Various clearing).
20 " "
10 " } Mission track woods
10 mouse
10 rat } mosquito woods
10 mouse
This map to be corrected
Village
Mangrove
Swamp (grass)
Dare
Sandstone outcrops
Sandstone continued to point over house
Mangrove
Mangrove
Mission
Garden
Garden
Swamp
according to Maidut
Coconuts
Main Road
Woodhouse
Stock
Lemon
mosquito woods
rest position
Mangroves
Mangroves
Sandy Beach visited by Leyden
HE
Tauwa Village
Rocks (Sandstones)
Channel
+++ = trap line
20
Bristoe Islands (Bobo)

Friday, Mar. 6. Tested out the new boy Gororo at finding trapline. He Scored 100. The catch was 2 Rattus brachyrhinus only, although we took another rail of a second species which Rand says is Rallus tricolor, and a skink.

After I had measured and labeled the rats I gave one each to the boys to skin. They made quite good jobs of them and I had only a few criticismx to make. I don't expect to let them stuff the skins ever, merely to take them off for me.

There was a big rent in the bat net this morning near the ground; probably a dog had run through it. The boys are repairing it now. Rand is breaking in two other boys to skinning birds.

Last night we had a very enjoyable time at the house of Mr. and Mrs. Woodward. The night was close and hot, but after dinner we played poker, the five of us. Brass and Woodward had rather poor luck. It was penny ante.

Am invited to go with Dr. Vernon and a visiting doctor from Thursday Island, Dr. Dowling out for the day in Vernon's boat across to the mainland and up the Oriomo River. It is a good opportunity to see the territory in which Archbold had one of his camps during the previous expedition. In the evening we all go to Vernon's for a general party. I understand that all Daru (white) is expected to be there.

Th s afternoon sent the boys out reset about seventy of the traps. I went out myself and placed a bunch of tree traps on practically every trunk in a patch of woods on the mission trail which I found a couple of days ago. If Pogonomys is on the island I hope to get it.

A tame hawk which we have had for about a week yesterday ate three lizards which had been picked in methylated spirit. The poor thing when I saw it about 7 oclock was sitting with its eyes shut swaying from side to side. This morining we thought it dead, for it was lying on the ground motionless. Actually it had a most terrific alcoholic jag on. And this evening twelve hours later it began to move slightly. Rand put water in front of it but probably it could not see. Then he dipped its beak into the water and it tokk a drop or two. Amoment or two later it sort of fell forward head first and bagan to drink. Tonight it is still dazed but sitting on its feet and I believe it will get over the experience completely.

We had fried curlew for supper tonight and very good indeed they were. Just afterwards a squall came up from the east, and it is coming down at this moment so heavily that I cant' hear even the click of my typewriter (we have a galvanized roof over this house.)

A nice lot of butterflies were sent down by Sampson from the Mission. They appeared to be in quite good condition; I had had to refuse the first lot because they were so badly broken up.

Saturday, Mar. 7. Torrential rain during most of the night. The trip to the Oriomo is cancelled and all this morning rain continued to fall. My tree traps failed to catch anything, but the boys brought in five R. brachyrhinus and one Melomys muscalis. Dr. Vernon Dr. Dowling and Beech arrived here and while we waited for the rain to stop they told tales of shark fishing and one thing and another.

Am closing this up so that it can go back on the Aramea with them.

BIKE BOOK BOMB

Daru, Papua.

Saturday, Mar. 7, 1936. At noon today I closed and posted letter no. 10. Rand took a canoe and ten men and crossed the strait to the South New Guinea mainland. He left about 1.30 and it is now 6 p. m.

This afternoon I send out the boys to rebait the general trapline and went myself to rebait my tree traps. Afterwards went down to low tide line to collect some Mollusca and Crustacea. On my return found several boys waiting for me with butterflies, one of whom had not only collected them in excellent condition but had even put them up in papers. I drew a few pictures of wasps, grasshoppers and bugs and beetles and told them to bring them as well. They seemed to get the idea pretty well too.

Rand got back about 8 oclock bringing a duck, an osprey, a Pteropus fruit-bat, and a living sulphurcrested cockatoo. He had left the canoe theother side, and the tide had done the same, so that considerable time had been taken up in getting it launched again.

Dr. Vernon's party was held without his presence. He came down with a sudden attack of fever in the afternoon and was in bed while the party progressed. We played a table of bridge and the others played poker.

Sunday, Mar. 8. Only four R. brachyrhinus in traps. The tree traps failed again to get anything. We'll keep them going but I fear that little hope remains of trapping Pogonomys on Daru.

The"Aramea" sailed this morning taking with Dr. Dowling and Mr. Schlenker the missionary who is going away for a month to be married.

Yesterday the chrysalis taken at Dr. Vernon's (see L 10, S. 6) hatched out. The moth is species quite common about here, a big yellow moth with dark speckles, more Arctiid-like than Geometrid-like.

A full grown Ampelophagous sphinx caterpillar brought in on vine leaves from Beech's garden spun up yesterday among the leaves

Went up to Vernon's and read a book by Aldous Huxley this afternoon. About five oclock a boy arrived with a rat which he said he had caught in his canoe which was beached just to the right of our landing ramp. He saw it first out on the shore (Sandstone beds more or less mud-covered and backed by regenerated mangrove which is as yet only a couple of feet high. The rat proved to be a large Melomys, with broad hind foot denoting arboreal habitus, color brownish gray, tail with unimbricated, rounded hexagonal scales, each of which bears but one scale hair less than a scale-length. The animal was a female and the mammae (2 pairs of inguinal only) are very large and thick as compared with those of the Rattus I have examined. They are also slightly recessed in the abdominal skin. The ear is not very large, but the eye as with most tree inhabiting, nocturnal animals is decidedly large. In the skull (roughed out) the teeth show no sign of the broadening of the meyeri group, and the snout is markedly short in comparison with the dimensions of the braincase.

This afternoon the boys tried to give our new cockatoo, which is filthily dirty, a bath, which accounted four the enraged squalking which we heard proceeding from under the house. No bath was given, and only one hand of the several taking part got a really severe bite.

The boys love to decora e their frizzy hair: you see them going along with the flower of an Alamanda, bright yellow, drooping gra cefully over one ear; or a feather standing upright above the head; they carry their long three- or four-pronged combs sticking in their hair just anywhere; and last night our table boy appeared with three or four strips of the cotton that comes endlessly out of new bottles of pills drooping from one ear, and another strip wreathed aslant around his fuzzy mop. The effect was quite rakish, something like the tilt the Highlanders give their "bonnets". They try hard to understand you. If one thinks he catches your meaning he at once proceeds to elaborate at considerable length to the others. They pronounce their few words of English with little regard for consonants: finees for finish; lice for rice; all peas and beans are 'beans'; Aia calls motorcar 'moto'c'

Saturday, Jan. 7, 1950. At noon today I closed and posted letter no. 10. Ruth took a canoe and ten men and crossed the strait to the South New Guinea mainland. We left about 1.30 and it is now 6 p.m.

This afternoon I went out the boys to remit the general tidying and went myself to rebuilt my tree trap. Afterwards went down to the tide line to collect some molluscs and crustacea. On my return found several boys waiting for me with butterflies, one of which had not only collected them in excellent condition but had even put them up in papers. I drew a few specimens of mantis, grasshoppers and bugs and beetles and told them to bring them as well. They seemed to get the idea pretty well too.

Ruth got back about 5 o'clock bringing a duck, an octopus, a Eleronna [illegible], and a living amphimenaded octopus. He had left the canoe there also, and the tide had done the same, so that considerable time had been taken up in getting it launched again.

Mr. Vernon's party was held without his presence. He came down with a mild attack of fever in the afternoon and was in bed while the party progressed. He played a table of bridge and his others played poker.

Sunday, Jan. 8. Only from 8. observations in bunks. Ian was trying again to get anything. We'll keep them going but I fear that little hope remains of bringing [illegible] on board.

The "Arafura" sailed this morning taking with her Mr. Pontius and Mr. Schlenker the miss[illegible] who is going to be married.

Yesterday the crystals taken at Mr. Vernon's (see I 10, 2.10) burned out. The moth is [illegible] quite common about here, a big yellow moth with dark [illegible], more [illegible]-like than [illegible]-like.

A full grown amphionoyous [illegible] brought in on vine leaves from [illegible]'s garden [illegible] yesterday among the leaves.

Mr. Vernon's and [illegible] a book by Aldous Huxley this afternoon. About five o'clock a boy arrived with a [illegible] which he said he had caught in his canoe which was [illegible] just to the right of our landing-[illegible]. [illegible] it first out on the shore (Sandy one [illegible] more or less [illegible]-covered [illegible] by [illegible] manure which is [illegible] as a couple of feet high. The [illegible] proved to be a large [illegible], with broad hind foot [illegible] [illegible], color [illegible] gray, tail with [illegible], rounded [illegible] scales, [illegible] of which [illegible] one scale-length. The animal was a female and the mammae (2 pairs of inguinal only) are very large and [illegible] as [illegible] those of the [illegible] I have examined. They are also slightly recessed in the abdominal skin. The ear is not very large, but the eye is wide. [illegible] nocturnal animals is [illegible] large. In the small [illegible] the [illegible] show no sign of the broadening of the [illegible] and the snout is markedly short in comparison with the [illegible] of the [illegible].

This afternoon the boys tried to give our new cockatoo, which is fitfully [illegible] a bath, which accounted from the [illegible] available which we heard proceeding from under the house. No bath was given, and only one band of the several [illegible] [illegible].

The boys [illegible] [illegible] [illegible] [illegible] [illegible] the flower of an [illegible], bright yellow, [illegible] [illegible] [illegible] [illegible] [illegible]

Monday, Mar. 9. Two Rattus brachyrhinus only. Heavy rain last night may have spoiled trapping partly. This morning put thirty tree traps on the coconuts adjoining the place where the canoe was beached in which the new Melomys described yesterday was caught. I rather feel however that the animal have come concealed among packages of sago with which the canoes were loaded from the Bamu River district, north of the Fly River. In that event we shall probably not find that species again at Daru.

After lunch started out once more to try to find the great swamp to the southwest of the island. There is a perfect network of trails is places, and the first time I went wrong I recognized the fact after about a quarter of a mile; the next time I never did find the proper way, although I went through a lot of new territory as appears on the new map which I have drawn to illustrate the walk I took. Came to several large new native gardens and a number of abandoned ones. Finally turned due east along a track which brought me out some 300 yards south of Vernon's south fenceline. Plant to go out with Brass tomorrow. He went with a guide the other day. He showed me that I was very near the swamp but missed it at one of the gardens, where the track becomes obscured for a time. The big patch of woods which on the map I have marked as having such bad mosquitos, is from the standpoint of forest the most attractive I have seen yet on Daru. But the the mosquitos are fierce there

Last night we had a visitor, a missionary named Standing, of the Unevangelized Christian Mission. His station is on the River Aramea, tributary of the Bamu River. He told a number of tales of going about in overloaded canoes and getting upset or swamped in various uncomfortable places, one of which was at the mouth of the Fly River two miles from shore.

The weather has become rather stormy and last night we had a lot of rain again.

Tuesday, Mar. 10. The boys brought in two R. brachyrhinus. The coconut sets on the trunks of the trees produced nothing whatever. Took a walk eastwards along the trail among the mangroves. Saw nothing of importance.

Beech has just pointed out that rain has been getting into the storeroom and that the bottom bags of rice and brovosions are mouldy.

This afternoon I tried once more to reach the great swamp. Last night's rain has put all the tracks under from six inches to a foot of water; and the water in the swamp (which this time I found without trouble) was so high that I should have had to go waist deep to get even to the edge of the clear water. The approach however is distinctive, being composed of dwaffed teatree forest with a ground cover of wide patches of a very short grass or sedge interspersed with the great fern Acrostichum (Brass 6211).

Went over to Beech's this evening where found him playing Cribbage with Mr. and Mrs. Leyden. I cut in but I hadn't played the game for at least ten years. Had the cyanide bottle with me and picked up several interesting though small moths during the evening. Weather all night gusty and threatening rain.

Wednesday, Mar. 11. No rain after all.

It is rather disappointing to find what look like good trapping places unproductive. The twenty sets made in mosquito woods yesterday did no good. Probably the holes around the bases of the trees were made by crabs and not by mammals at all. Two juvenal R. brachyrhinus were secured only.

This morning turned in between Maidment's and Beech's places and worked around and out behind the Mission. Found the patch of woods where the Mission children are probably catching their butterflies, as I saw a male Ornithoptera a great green and black creature with a sulphur yellow abdomen flitting through the trees.

Monday, Mar. 9. Two *Papilio* *polyxenes* only. Heavy rain at night may have spelled trouble for the morning but thirty-two traps during the coconuts adjoining the place where my canoe was beached during the new *Melipona* described yesterday was empty. I rather feel however that the animals have some concealed method of getting at the bait which the canoes were loaded from the Bush River district, north of the Fly River. In that event we shall probably not find them feeding again at dawn.

After lunch started out once more to try locating the great swamp to the southwest of the island. There is a perfect network of trails in places, and the first time I went wrong I recognised the fact after about a quarter of a mile; the next time I never did find the proper way, although I went through a lot of new territory as appears on the new map which I have drawn to illustrate the walk I took. Came to several large my native gardens and a number of abandoned ones. Finally turned due east along a track which brought me out some 500 yards south of Vernon's south fencelines. Plant to go out with Brass tomorrow. He went with a guide the other day. He showed me that I was very near the swamp but missed it by one of the gardens, where the track became obscured for a time. The big patch of woods midway on the map I have marked as having much bad mosquitos, is from the standpoint of forest the most attractive I have seen yet on Iamu. But the mosquitos are there.

Last night we had a visitor, a missionary named Chandling, of the Unevangelised Christian Mission. His station is on the River Aramese, tributary of the Bush River. He told a number of tales of going about in overloaded canoes and getting upset or swamped in various uncomfortable places, one of which was at the mouth of the Fly River two miles from shore.

The weather has become rather stormy and last night we had a lot of rain again.

Tuesday, Mar. 10. The boys brought in two *P. brevipennis*. The coconut pets on the trunks of the trees produced nothing whatever. Took a walk southwards along the trail among the mangroves. Saw nothing of importance. Beach near just pointed out thirty rats has been getting into the interior and that the bottom bags of rice and provisions are mouldy.

This afternoon I tried once more to reach the great swamp. Last night's rain has put all the trunks under six inches to a foot of water, and the water in the swamp (which this time I found without trouble) was so high that I should have had to go waist deep to get round to the edge of the clear water. The quadrant however is definitely being cleared of water tenacee forest with a ground cover of wide patches of a very short grass or sedge interspersed with the great fern *Acrostichum* (Brass 6221).

Went over to Joseph's this evening where found him playing Criterion with Mr. and Mrs. Boyden. I cut in but I hadn't played the game for at least ten years. Had the ayapple bottle with us and picked up several interesting though small moths during the evening. Weather all night cloudy and threatening rain.

Wednesday, Mar. 11. No rain at all.

It is rather disappointing to find what look like good trapping places unproductive. The twenty cocos nuts in mosquito woods yesterday did no good. Probably the holes around the bases of the trees were made by crabs and not by mammals at all. Two juvenal *H. brevipennis* were secured only.

This morning turned in between breakfast's and beach's places and worked around and out behind the Mission. Found the patch of woods where the Mission children are probably catching their butterflies. Saw a male *Ornithoptera* a great green and black creature like a gulliver yellow abdomen flitting through the trees.

This afternoon at 1.45 the "Kono" caught us all by surprise and came roaring in from the back of the island. She circled and described various S's before she came down in the channel. Wild excitement reigned among the natives of Daru and our "boys". All the population gathered along the shore to watch her come in. The wheels were let down and one of them stuck in a crack in the rock which had been concealed by mud. She had to stay there for a couple of hours while the tide ran out and left her. Rand, Brass and I were pushed out by boy in a canoe, and a minute later Leyden Customs Officer pulled alongside. Archbold went ashore with him., Rogers and Yulestedt coming back with us.

At low water a number of boys with Rogers and Archbold went out to the "Kono" and while Archbold started the engine Rogers had the boys heave up under the wingfloat of the side whose wheel had sunk, and the ship was free in less than a minute. She taxied steadily towards the new slipway, but once there the new ground though rockfilled proved to be rather soft in places and the wheels sank more than once. However the same proceedure brought her safely onto the place prepared for her and turned around. I went down and took a number of pictures of the entire affair.

There was much exchange of news: they had assembled and tested the boat in a week after reaching Brisbane. Brisbane was left bahind three days ago, and Cairns this morning at 7.30, just ab ut six hours before reaching Daru. The Brisbane newspapers ahd made the most of photographic opportunities offered when the ship was being assembled and we were shown a number of press photographs that had not actually been used in the papers as well as those which had.

A considerable quantity of baggage as well as all the radio equipment was brought as cargo. In addition a new 100-gallon gasoline tank has been fitted in the middle cabin, so that now with a full load of gas the "Kono" can go 1200 miles without another fill-up.

Thursday, Mar. 12, 1936. Last night very heavy rain between 9 and 11 oclock. Clear again this morning.

Traps produced the customary two Rattus brachyrhinus. Went out with net to take insects other than butterflies which the children of the Mission have been bringing in considerable variety. Took. Such things as leaf-hoppers, grasshoppers, dragonflies, wasps, sawflies, beetles. Had a fairly successful m rning at it.

The slipway for the plane has to be reinforced with stone. The "boys" were hard at work on it when I got back. Then Archbold wants to pipe water from Beech's well down to the slip so as to have water for washing the ship. Julestedt, although he worked Thursday Island and Port Moresby yesterday coming up, could not get through this morning with the other radio set. He and Rogers are working upon it this afternoon.

The "boys" have an odd habit of bending very low as they pass us sitting at our table. It has been explained by the fact that in their own village none of them is allowed to have his head higher that that of the chief. And as we happened to be seated they had nearly to crawl to get by.

Friday, Mar. 13. Only one Rattus today but plenty of work arrived in the form of a dugong which had been harpooned the night before by Kiwai fishermen. It has taken a good part of the day to take the skin off and make the animal into a skeleton. In the middle of the morning too a boy brought in a fruit bat of the genus Dobsonia. So all things together, I've had a busy day. The "Kono" is to fly to Port Moresby on Sunday, and will carry mail. So I'm going to get this letter on her. The envelopes(may even send more than one) willbe quite valuable so hang on to them.

This afternoon at 1.15 the "Kono" caught us all by surprise and came roaring in from the back of the island. She circled and described various S's before she came down in the channel. With excitement mounting among the natives of Tarawa and our "boys". All the population gathered along the shore to watch her come in. The whale was let down and one of them stuck in a crack in the rock which had been concealed by mud. We had to stay there for a couple of hours while the bits ran out and left her. Hence, Brass and Tarpey swam out by boy line and, ten minutes later the Senior Officer pulled alongside. Everybody went ashore with him. Tarpey and Wildsoon coming back with us.

The water is under of the Arafuras and Arabbuli went out to the "Kono" and while Arabbuli started the engine Tarpey and the boys have up under the starboard of the ship where what had sunk, and the ship was free in less than a minute. She taxied gently towards the new slipway, but once there the new ground through reclaimed proves to be rather soft in places and the wheels sank more than once. Hence the same procedure brought her safely onto the dress six tendered for her and turned around. I went down and took a number of photos of the entire affair.

There was much exchange of news: the boys had assembled and launched the boat in a week after receiving Brabbins. Brabbins was left behind three days ago, and Tarawa this morning at 7.30, just about six hours before reaching Tarawa. The British newspapers and mail of photographic opportunities offered when the ship was being repaired and we were shown a number of press photographs that had not actually been used in the papers as well as those which had.

A considerable quantity of baggage as well as all the radio equipment was brought as cargo. In addition a new 100-gallon gasoline tank has been fitted in the middle cabin, so that now with a full load of gas the "Kono" can go 1500 miles without another fill-up.

Tuesday, Jan. 12, 1955. Last night very heavy rain between 9 and 11 o'clock. Clear again this morning.

Brass produced the customary 'a Lating Breakfast'. Went out with Tarpey to take leave other then butterflies which the children of the Mission have been bringing in considerable variety. Too. Such things as fast-hoppers, grasshoppers, dragonflies, wasps, beetles. Had a fairly successful a rating of it.

The all way for the plane has to be reinforced with stone. The "boys" were hard at work on it when I got back. Then Arabbuli waits to go to water from beach is well down so the ship so as to have water for washing the ship. Unfortunately, although the owner Thirsty Island and out yesterday coming up, could not pass through this morning with the other radio set. Hopes are working upon it this afternoon.

The "boys" have an odd habit of bringing very large bunches of something at our table. It has been explained by the fact that in their own village none of them is allowed to have a bunch bigger that that of the chief. And as it appeared to be stated that they had nearly to crawl to get it.

Friday, Jan. 13. Only one Native boxer but plenty of news arrived in the form of a dugong which had been harpooned the night before by Elbert Fishermen. It was taken a good part of the day to get the fish off and make the animal into a blubber. In the middle of the morning too a boy brought in a turtle half of the same Tabonuka. So all hands together, live and dry day. The "Kono" is to fly to Fort Moresby on Sunday, and all carry mail. So I'm going to get this letter on her. The overloaded may even send more than one) while quite valuable so bang on to them.

Saturday, Mar. 14. Got a couple of Radio messages off to Port Moresby this morning. Plenty of interference however. The Dugong caught yesterday is fairly well skeletonized today; still some meat to be taken off the bones however. Nothing in the rat traps this morning. Aia is to change a number of them this afternoon. So we ought to take some tomorrow. As a matter of fact though there was one thing caught: a very large ~~Cossid~~ Cossid moth was almost cut in two by a rat trap. It is tongue-less so could not have been interested in the bait but must have come against the treadle accidentally. It is the first moth I have ever taken in a trap set for mammals. Heavy rain most of this morning.

The "Kono" is to leave for Port Moresby tomorrow morning some time. She will probably not come back until Thursday or Friday of next week, as there is a good deal f equipment to be unpacked from the shipment Archbold sent by boat from Brisbane which she is to bring back with her.

It being Saturday afternoon not very much work was done by the boys. I walked out to Beech's and Vernon's farms and picked a lot of old trapline up ready to have it reset in new places.

In the evening went out to play bridge with the Woodwards and the Leydens at the latter's house. Collected quite a nice lot of moths at their lights.

Sunday, Mar. 15. Traps gave two R. brachyrhinus. We have been working steadily to finish up the skeleton of the dugong. The job has just been completed.

The plane left at 9.10 for Port Moresby. We were to keep in touch with her by radio but have been unable to raise her. The trip is only two hours, so they ought to be there by now noon). Hope the letters get safely into the postoffice. She was carrying official mail.

Very hot today. 91 Far. this afternoon. Nobody had energy to do much of anything. I rode out with Beech to his farm but for the ride only and to get a breath of air. Yesterday with the road practically under water he had skidded into the ditch but having plenty of boys to pull him out again it didn't matter. Today the road was much drier.

This evening out to supper with Dr. Vernon and Mr. and Mrs. Leyden joined us afterwards for their first lesson in "Contract". Vernon has played it before, but the Leydens are both good Auction players and picked it up quickly. Mrs. L. however had a touch of fever so we closed up the game early.

At dinner Dr. Vernon had served canned salmon, a very nice salad, and for dessert a bread pudding with that coconut cream of which I once told you as sauce for it. It tasted "swell".

The rest of our crowd went up to play poker at Woodwards'.

Monday, Mar. 16. A bad day: thunder in the early morning and heavy rain clouds building up to the east of us and bearing down. The rain is just starting.

Weather only moderated at noon. I went out to Vernon's and set new line of 33 rat traps. Found Doc. Vernon there and we had tea before walking back home. He had been planting tomato plants (cuttings) on an old megapode's nest. The nests are remarkable mounds of earth (about five tons of dirt each, said to be scratched up by a single pair of birds whose size is only slightly greater than that of a hen).This nest was about ten feet wide at the base, roughly circular, and about five feet across on the flat top which was roughly four feet above ground level. It is not known, according to Rand, whether the same nest is used for life (or added to), or whether a new nest is made each breeding season.

In the evening I got Brass and Rand to give me the essentials of a Motuan vocabulary. Motuan is the chief language used among our boys. Some however use Gossiago,(I'm not sure whether that name really indicates a distinct tongue or whether it means a people who use a dialect of Motuan).

Saturday, Mar. 14. Got a cable of Radio message off to Port Moresby this morning. Plenty of interference however. The Dogong orders yesterday is fairly well established today; still some meat to be taken off the bones however. Nothing in the air these this morning. He is to change a number of them this afternoon. So we ought to take some tomorrow. In a matter of fact though there was one thing caught: a very large ~~kamaria~~ dogfish with was almost dead in the by a net trap. It is things-like so could not have been interested in the bait but must have come against the trap accidentally. It is the first moth I have ever taken in a trap set for mammals. Very rich meat of this morning.

The "Cora" is to leave for Port Moresby tomorrow morning some time. She will probably not come back until Thursday or Friday of next week, as there is a good deal of equipment to be unpacked from the shipment Lindbolt sent by boat from Brisbane which she is to bring back with her.

It being Saturday afternoon not very much work was done by the boys. I walked over to Geoff's and Vernon's farms and picked a lot of oil training up ready to have it sent in new places.

In the evening went out to play bridge with the Moodmans and the Leydens at the latter's house. Collected quite a little lot of money at small stakes.

Sunday, Mar. 15. Tape, eve two E. Dreadfully. We have been working steadily building up the elevation of the dugong. The job has just been completed.

The plane left at 9.10 for Port Moresby. We were to meet in touch with her by radio but have been unable to raise her. The wind is only two knots, so they ought to be there by now most. Hope the letters get safely into the post office. She had carrying official mail.

Very hot today. At Per. this afternoon. Nobody had energy to do much of anything. I rode out with Beech to his farm but for the ride only and to get a breath of air. Yesterday with the room practically under water he had ambled into the office but having plenty of boys to pull him out again it didn't matter. Today the road was much drier.

This evening out to supper with Dr. Vernon and Mr. and Mrs. Leyden joined us afterwards for their first lesson in "Contract". Vernon has played it before, but the Leydens are both good Auction players and picked it up quickly. Mrs. L. however had a touch of fever as we closed up the game early.

At dinner Dr. Vernon had served canned salmon, a very nice a lad, and for dessert a bread pudding with that coconut cream of which I once told you as sauce for it. It tasted "swell".

The rest of our crowd went up to play poker at Moodmans'.

Monday, Mar. 16. A bad day: thunder in the early morning and heavy rain clouds building up to the east of us and heading down. The rain is just starting.

Weather only moderated at noon. I went out to Vernon's and met Mr. Ire of 33 yrs. Dunn Tce. Vernon there and we had tea before walking down home. He had been planting bonsho plants (cuttings) on an old megapode's nest. The nests are remarkable mounds of earth, about five tons of dirt each, said to be scratched up by a single pair of birds whose size is only slightly greater than that of a hen. This nest was about ten feet wide at the base, roughly circular, and about five feet [illegible] the flat top. Mound roughly four feet above ground level. It is not known, according to Vernon, whether the same mound is used or, like (or better) [illegible], or whether a new nest is made each breeding season.

In the evening Lord Frans and Vernon gave us the essentials of a Roman vestalary. Roman is the only [illegible] to need [illegible] our boys. Some however use Dogdogo. (I'm not sure [illegible] there really [illegible] a distinct tongue or whether it means a pen [illegible] Kuthlent or Roman).

Tues., Mar. 17, 1936. A fair morning without rain during the night. Yesterday 's morning rain brought the temperature down to 77; it had been between 91 and 94 through most of the day. This afternoon (5 p. m.) after unbroken sunshine all day it is 90.

Went out early to examine my new line; not a thing in it, though traces of four skinks were to be seen. The catch from the other line was four: 3 Melomys and 1 Rattus. Am getting enough data on the breeding periods of this species R. brachyrhinus to enable me to put together a very fair table (for 1936) covering the months of March and February.

We had to build an open pole platform for drying the bones of the dugong this morning. The platform stands four feet abo ve ground and the skeletal parts are spread out on it after which a fire is kindled on the ground beneath.

This afternoon I took the boys out to show me where their trap lines now are. They change them about once in a while and I have to keep track of where they put them.

Last night on the short wave radio set we could hear various U. S. stations: New Brunswick, N. J. Passadena, Calif., some place in Indiana. We also picked up a station in the Belgian Congo calling some other local station. Tomorrow morning we are going to try to get the Kono at Prot Moresby and find out when she is due back here.

Trapping here on the island is extremely poor. It averages a daily catch of between 1 and 2 % of rats to traps. The boys are shaping up very well however, and they get a little skinning practice daily as well as plenty of exercise at setting traps. I intend to demonstrate steel traps before very long. But I take them along pretty slowly on purpose.

The tide here is extraordinarily erratic. It ought to work out at fifty odd minutes later daily. Yet some days it stays in for hours and others it hardly comes in at all. The facts are complicated: First of all we have a tidal wave crammed in between New Guinea, the Solomons, and North Australia; next we are situated on an island whose channel opens at each end to the sea and may thus be held to experience two waves of tide; finally upon the direction and strength of the wind depends the question whether those waves reach Daru (where we are) at the same time or not.

Wed. Mar. 18. Male and female Rattus brachyrhinus and a fine adult nearly perfect specimen of a male Melomys muscalis. A strongly defined rufous patch appears on the nape and between the ears of this individual.

A fair day. Probably will get hot later. Looking for radio news from the Kono this morning.

Worked radio all morning: could talk to Port Moresby all time and could hear Rogers on the ship, but he could not get us. Kono arrived at 12.20. It had left Moresby at 9.30.

First mail received from the States. Champion who has been over from the Fly to the Sepik came back on the Kono to show us the route taken by his party, this time from the air. The new transport man Willis was the other passenger. In the afternoon Rogers took the plane up once more for a short flight in order for us to give the radio a further test. And last night Champion brought out his new map on which he shows the newly discovered Lake Marguerite and the Leonard Murray mountains as interpreted through a recent flight made by him from the Leahy Brothers' airport near Mt. Hagen, across the main range in a southwesterly direction and back again.

Thur. Mar. 19. One Rattus brachyrhinus and two female Melomys muscalis. I shall be glad when we can get to some station where trapping will be more productive and more varied. We tried to raise VIG (Port Moresby) at ten ock. as agreed but could not get him. Perhaps he had too much work on hand to be able to spare us the time.

Tues., Mar. 17, 1953. A fair morning without rain during the night. Yesterday's morning rain brought the temperature down to 77; it had been between 81 and 84 through most of the day. This afternoon (4 p. m.) it was unbroken sunshine all day; it is 80.

Went out early to examine my bee lines: not a thing in it, though traces of four animals were to be seen. The catch from the other line was four: 2 Jalonya and 1 Rattus. As getting enough data on the breeding periods of this species I, [illegible] to enable me to put together a very fair table (from 1952) covering the months of March and February.

We had to build an open pole platform for drying the bones of the durong this morning. The platform stands four feet above ground and the skeletal parts are spread out on it after which a fire is kindled on the ground beneath.

This afternoon I took the boys out to show me where their trap lines are. They change them about once in a while and I have to keep track of where they put them.

Left night on one about 2½ feet long was found near various M. S. stations see first week. [illegible] Pseudomys Gracilis, some place in Indiana. We also proceeded to a station in the Pelican Island called Killing some other local stations. Tomorrow morning we are going to try to get the Xone at Port Moresby and find out when and if it was seen here.

Trapping here on the island is extremely poor. An average daily catch of between 1 and 2½ of rats to traps. The boys are keeping up very well however, and they are a little skeptic about practice daily as well as theory of skeletal at skeletal traps. I intend to demonstrate a real trap before very long. But I take them along only slowly on purpose.

The tide here is extraordinarily erratic. It ought to work out at fifty odd minutes later daily. Yet some days it stays in for hours and other is merely covers it at all. The tides are complicated: first of all we have a third wave crossed in between sea Guinea, the Solomons, and North Australia; next we are situated on an island whose channel opens at each end to the sea and may thus be held to experience two waves of tide; finally upon the direction and strength of the wind depends the question whether those waves reach Port (where we are) at the same time or not.

Wed. Mar. 18. Male and female Petaurus breviceps and a fine adult nearly perfect specimen of a male Jalonya murcalia. A strongly marked rufous patch appears on the nape at between the base of this [illegible].

A fair day. Probably will get not later. Looking for radio news from the Kono this morning.

Morse radio all morning: could tell to Port Moresby all time and could hear Porere on the air, but he could not get us. Kono arrived at 12.20. It has left Moresby at 2.20.

First mail received from the States. Champion who has been over from the Fly to the Eagle came back on the Kono on a new or the route taken by his party. This time from the air. The new transport man Willis was the other passenger. In the afternoon Eagle took the plane up once more for a short flight in order for us to give the radio solution test. And in the night Champion brought out his new map on which he shows the newly discovered Lake Margarette and the Leonard Murphy mountains as interpreted through a recent flight made by him from the Leahy Brothers' airport near Mt. Hagen, across the main range in a southwesterly direction and back again.

Thur. Mar. 19. The Pacific Headquarters has two Jalonya magazine. I should be glad when we can get to some station where trapping will be more productive and more varied. We tried Wrasse VIB (Port Moresby) at ten cock as agreed but could not get him. Perhaps he had too much work on hand to be able to spare us the time.

Fri. Mar. 20. This morning went with the Kono as radio opr. while Julstedt stayed to work the gnd station. We flew only for an hour: up the Oriomo river to Wuroi, then across to Dogwa (both stations used by Archbold during the last expedition). Thence we went northeast to the delta across the mouth of the Fly river; again we changed course and flew southeast nearly to Darnley Island; turned back to the Fly and south again to Daru. We had intended to take a look at Bramble Cay but Archbold did not go there after all.

The radio morse from Daru came in to me very strangly, but it was hard to keep the ship's receiver which has remote controls from the instrument board in tune. Then too the main cable between the generator and the transmitter at the base station shorted, and Julstedt could not send out signals for the last quarter of an hour. He heard everything I sent however.

At the five oclock schedule with Moresby we learned that the Vaimauri which had left Port Moresby in the morning carrying almost all of the stores brought by Archbold had put back with serious engine trouble. Another boat will not be available to replace her until early in April. The Papuan Chief, due yesterday is overdue.

Have arranged to get two more boys to learn skinning and trapping. My two this morning failed to get anything last night. I have sent them out to move their traps this morning.

Champion who will be flying up the river with us to point out the spots where he went through the mountains a few years ago, is taking his meals with us. It was funny last night when corn (very hard, old chicken corn) boiled on the cob had been served to be sitting talking with someone and suddenly notice a black hand reach quietly over your shoulder and whip the cobs off your plate. Again Brass called for more bread, and instead of it coming on a plate as usual a block of it was thumped down on the table beside him. You will guess that we have a new table boy. His name is Ego-ego.

Sat. Mar. 21. Our radio schedule with Port Moresby comes at 10.45 a.m. on Saturday.

Sent off message doubling supply order to give extra margin of provisions. Message went by radio as VIG came through in good order. We don't have them again until 5 on Monday evening.

Boys got no rats today. Sent them out to change the traps so tomorrow a few specimens ought to come in. Got a little shooting practice with Colt 5-chamber and Luger automotic. The bird shooting boys are beginning to learn how to find and shoot specimens. Have two new boys selected for myself, namely Tanamoia and Taikudo. They will start on Monday to learn the art of trapping and skinning mammals.

The "Papuan"Chief" turned up at last, getting here about five oclock. She has about 75 natives on board being returned to their villages after conpleting their labor contracts. Also she has a few more of our boys.

Russell Rogers cut my hair this evening. It was the first time he had ever cut anyone's hair!

Healy the police officer and six police arrived on the Papuan Chief as well as a man named Adams who is traveling medical officer. He came now from Kikori in the Gulf. In the evening Maidment, Beech and Adams came around and we listened to the new HRO receiver which picks up and amplifies radio from all over the world. Collected a few more rather nice moths during the evening -- all little ones though.

Fri. Mar. 20. This morning sent with the Tonga as radio op. While anxious
always to work the pad station. Maybe only for an hour to the Gilbert River
to Wurel, then across to Tonga [illegible] used by a schooner during the
last excedition). There we went northwest to the delta across the mouth of
the Fly River, again we changed course and flew southeastwardly to Tamalay
Island; turned back to the Fly and south again to Lyon. We had promised to
take a look at Kwaiba (by our Rockhold did not go there after all).

The radio noise from Darwin came in so very strangely, but it was hard to
keep the mobile receiver which has remote controls from the instrument board
in tune. Then too the radio cable between the generator and the transmitter
at the base station aboard, and Dulevedt could not send out a signal for
the equivalent of an hour. He heard everything I sent however.

At the Five Colonies Kubwula with Koresby we learned that the Vainamut which
had left Port Moresby in the morning carrying almost all of the stores brought
by Kubwula had put back with serious engine trouble. Another boat will not
be available to replace her until early in April. The Papuan Chief, due
yesterday is overdue.

Have arranged to get two more boys to learn skinning and trapping. My two
this morning failed to get anything last night. I have sent them out to
move their traps this morning.

Champion who will be flying up the river with us to point out the spots
where he went through the mountains a few years ago, is taking his meals with
us. He was jumpy last night when born (very hard, old chicken corn) boiled
on the cob had been derived to be sitting talking with someone and suddenly
notice a black hand reach quietly over your shoulder and with the cobs off
your plate. Again Irene called for more bread and instead of it coming on
a plate as usual a block of it was thumped down on the table beside him. You
will guess that we have a new table boy. His name is Ego-ego.

Sat. Mar. 21. Our radio schedule with Port Moresby comes at 10.45 a.m.
on Saturday.

Sent off message (nothing urgent) order to give extra margin of provisions.
Message went by radio as VIO came through in good order. We don't have them
again until 6 on Monday evening.

Boys got no rats today. Went down out to change the traps so tomorrow a
few specimens ought to come in. Got a little shooting (mostly with 22
6-chamber and Luger automatic. The old shooting boys are coaching so learn
how to fire and shoot moving. Have two new boys reported for myself, namely
Tamanole and Tainuo. They will start on Monday to learn the art of trapping
and skinning mammals.

The "Papuan Chief" turned up at last, anchoring here about five o'clock. She
has about 75 natives on board going back to their villages after completing
their labor contracts. Also she has a few more of our boys.

Russell Rogers put my hair this evening. It was the first time he had ever
cut women's hair!

Early the police officer and six police arrived on the Papuan Chief as well
as a man named Adams who is travelling medical officer. He came now from
Kikori in the Gulf. In the evening Matthews, Beech and Adams came around
and we listened to the new NBC receiver which picks up and amplifies radio
from all over the world. Collected a few more insect bites during the
evening -- all little ones though.

Sun. Mar. 22. Sunday was taken up chiefly with the prearations for the next day's trip to the upper Fly. Discussion centered particualrly with the materials to be taken in case for some reason our erturn should be delayed and we should have to spend any time up there. In the end a skeleton camping outfit and ample food was decided upon.

In the evening we were invited, all nine of us, to the Woodwards', and had just dressed in our best field shirts and were in the middle of dinner when a note came addressed to Archbold. As he merely glanced at it and said ther would be no answer none of us imagined it had anything to do with us. But nearly a quarter of an hour afterwards he informed us that the party was off. Instead therefore we organized a couple of tables of cards ourselves.

Mon. Mar. 23. Up at Four oclock this morning; put final touches on equipment; had breakfast; and down and on board the plane at a few minutes before six. Plane started out (at dead low tide) and three quarters of the way out to the water the wheels stuck in the mud. We waited one and a half hours for the tide to rise and float her. Menawhile I went back for another cup of coffee. Our crew of six: Ar chbold Rogers, Brass, Rand, Champion and I were finally installed in the ship and we took off from the little parking place and ran her out towards the water. The tide being dead low she of course stuck in the mud and we had to wait for an hour and a half for the tide to rise enough to float her. At 7.33 then we took off. We crossed mixed for est and savanna country on the way to the lower Fly River, and beyond between the Fly and the Strickland found similar mixed country. Above the Strickland River was a mixture of woods and swampy savannas all the way to Lake Murray upon which we made a landing and looked about us. Lake Murray is 178 miles from Daru and we reached there at 9.25 a.m.

We had noticed a native village as we dropped down. It was located on a rather high dry island, and presently a canoe with two men in it came paddling towards us. We were all sitting all over the plane and lying out on the wings. When the men got about a hundred yards off they stood without paddling and just looked at us. At length one picked up a bunch of white feathers and called "sambi, sambi" (friend, friend); and Champion answered the same. They came a little nearer and stopped again. This time Arxhbold called them and and with out further hesitiation they came quite near. They had next to no clothes and were very black skinned. The old man wore a black beard and had his hair done with straws in some way. They traded the white feathers for some old nuts and bolts and a bundle of arrows for some yellow buntling. When we had to go we motioned to them to go. This they did, but happening to have paddled out ahead of the ship, when we hauled up anchor and started the motor we started right after them. You should have seen them put their backs into their paddling until they saw us veer off and realized that we were not chasing them.

We got away from the Lake at 10.40 and headed for the Black River about 100 miles north. Murray is very greatly indented, dotted with islands and comparatively shallow compared with its extent. We got 14 feet of water where we anchored. North of the lake the savanna ceased and we flew over continuous forest. Below us we coulds see numbers of great white cockatoos fl ying just above the tree tops disturbed by the noise of the plane.

The Elevala was crossed at 11.15 and mountains could be descried east of the Strickland's supposed position. To the north too foothills of the main ranges c uld be seen blue gray in the distance. At 11.29 we reached the Black River and turned left down stream to find its junction with the Palmer. From there we followed down to find where the Palmer joined the Fly. After looking over several long reaches of these rivers for landing places we decided to head for home. A direct course carried us east of Lake Murray and a slight notch in the landscape which we used to sight on turned out to have the Strickland flowing through it. The latter was crossed at 12.40; the Fly at 1.15 and we slipped in to Daru at 1.50 p. m. well satisfied with our first exploratory flight.

Sun. Mar. 22. Sunday was taken up chiefly with the preparations for the next day's trip to the upper Fly. Discussion centered particularly with the materials to be taken in case for some reason our return should be delayed and we should have to spend any time up there. In the end a skeleton camping outfit and ample food was decided upon.

In the evening we were invited, all nine of us, to the Woodwards', and had just dressed in our best field shirts and were in the middle of dinner when a note came addressed to Archbold. As he merely glanced at it and said ther would be no answer none of us imagined it had anything to do with us. But nearly a quarter of an hour afterwards he informed us that the party was off. Instead therefore we organized a couple of tables of cards ourselves.

Mon. Mar. 23. Up at four oclock this morning; put final touches on equipment; had breakfast; and down and on board the plane at a few minutes before six. Plane started out (at dead low tide) and three quarters of the way out to the water the wheels stuck in the mud. We waited one and a half hours for the tide to rise and float her. Meanwhile I went back for another cup of coffee. Our crew of six: Archbold Rogers, Brass, Rand, Champion and I were finally installed in the ship and we took off from the little parking place and ran her out towards the water. The tide being dead low she of course stuck in the mud and we had to wait for an hour and a half for the tide to rise enough to float her. At 7.55 then we took off. We crossed mixed forest and savanna country on the way to the lower Fly River, and beyond between the Fly and the Strickland found similar mixed country. Above the Strickland River was a mixture of woods and swampy savannas all the way to lake Murray upon which we made a landing and looked about us. Lake Murray is 178 miles from Daru and we reached there at 9.25 a.m.

We had noticed a native village as we dropped down. It was located on a rather high dry island, and presently a canoe with two men in it came paddling towards us. We were all sitting all over the plane and lying out on the wings. When the men got about a hundred yards off they stood without paddling and just looked at us. At length one picked up a bunch of white feathers and called "sambi, sambi" (friend, friend); and Champion answered the same. They came a little nearer and stopped again. This time Archbold called them and and with out further hesitation they came quite near. They had next to no clothes and were very black skinned. The old man wore a black beard and had his hair done with straws in some way. They traded the white feathers for some old nuts and bolts and a bundle of arrows for some yellow bunting. When we had to go we motioned to them to go. This they did, but happening to have paddled out ahead of the ship, when we hauled up anchor and started the motor we started right after them. You should have seen them put their backs into their paddling until they saw we veer off and realized that we were not chasing them.

We got away from the lake at 10.40 and headed for the Black River about 100 miles north. Murray is very greatly indented, dotted with islands and comparatively shallow compared with it extent. We got 14 feet of water where we anchored. North of the lake the savanna ceased and we flew over continuous forest. Below us we could see numbers of great white cockatoos flying just above the tree tops disturbed by the noise of the plane.

The Elevala was crossed at 11.15 and mountains could be described east of the Strickland's supposed position. To the north too foothills of the main ranges could be seen blue gray in the distance. At 11.29 we reached the Black River and turned left down stream to find its junction with the Palmer. From there we followed down to find where the Palmer joined the Fly. After looking over several long reaches of these rivers for landing places we decided to head for home. A direct course carried us east of Lake Murray and a slight notch in the landscape which we used to sight on turned out to have the Strickland flowing through it. The latter was crossed at 12.40; the Fly at 1.15 and we slipped in to Daru at 1.50 p. m. well satisfied with our first exploratory flight.

Tues. Mar. 24. The second flight was pulled off today. This time we only got up at 5 oclock. The ship took off the water at 6.37; crossed the Fly at 7.03. This time we took a course which kept us well to the east of the Strickland River and bore on the notch in the mountains through which it emerges and which Karius, patrol officer named the Devil's Race.

Today we made a few new discoveries. The course was west of north, set at 310 degrees but with some easterly drift. and went up between the River and the Leonard Murray Mountains which have not been explored yet. At 7.52 a.m. we crossed a small very distinct crater lake, and a few minutes later another larger lake which had previously been described. The Leonard Murray Mountains became clearly visible but clouded over again soon. On the western foothills of the mountains we saw signs of a large population: extensive and continuous garden patches. Also between crater lake and the other a sizable river flowing over a water fall, whose course I could not follow.

At 8 oclock we passed what appeared t be a small broken out crater beneath us and on the left.; at 8.03 Leonard Murray Mts. bore straight right from the plane, and on its slopes the above mentioned gardens appeared. At. 8.12 passed a strongly developed east-west rift, apparently a line of faulting but I could not tell direction of fall in it of water, even if there were any. We were flying 320 degrees. At 8.25 saw deeply fissured ravines to right. A very high limestone mass of mountains ahead and on right with its top in the clouds.

A loop of the Strickland, the first seen of the river appeared for a moment full right. Series of parallel ridges seemed to incline from nw to se away from the mass of limestone just mentioned. The Strickland gap for which, as I have mentioned earlier, we were headed now appeared very near. We were flying at about 1900 meters now. Over to the left Mts. Blucher, Sare, and behind them the Dap Range and a host of lesser mountains could be seen rather clearly. The Great Limestone Mass now filled the entire horizon from east of north to due east.

At 8.50 we entered the Strickland basin through the gap. An immense gulf immediately appeared below and to the left, and beyond on the same side a deep valley with a water fall dropping from the top of the limestone range. That valley was crossed at 8.55, and shortly afterwards another much larger and deeper ~~8x58x~~ gorge coming in from the northeast and nearly twenty miles in length was reached at eight fiftynine. In the bottom of that gorge was one of the main tributaries of the Strickland. At 9 oclock our course was changed to due west and we skimmed among the ranges with the Victor Emanuel range, rather fog clothed on our right and the inner face of the Blucher range to the left. The Blucher is joined by an eastern spur from the Dap range which divides the Palmer basin from the Strickland basin. Over that ridge we flew, and down the basin of the Palmer to the gap between Blucher and Sare, through which Palmer makes its exit to the lowlands south. The plane at once changed course and turned west along the southern front of the Sare Range to find the spot where the Fly similarly comes out of the mountains. Both Palmer and Fly come out through immensely deep gorges similar to that of the Strickland. We turned into the mountains once more through the Fly gap and passed up the Bol, tributary of the Fly along the northern face of the Sare. That face was definitely precipitous and between the Sare and the Dap Range a connecting redge some 6000 feet above sea level separated the basins of the Bol and the Palmer. The above description is doubtless confusing, but the drawing that goes with this account ought to help clear the matter up.

For the second time we flew out through the Palmer gap, and this time dipped down from 2000 meters to examine the possibilities of using one of the reaches of the Black, Palmer or Fly for landing on. One or two spots offered distinct possibilities of success. We flew up and down the rivers just on a level with tree tops the while we examined for depth of water, absence of snags, etc.. That job finished we cut across to the west to take a look at the Alice or Teddi River. That one proved to be n. g. so we headed for home, getting a distint glimpse of ~~the Strick~~ Lake Murray at 10.48 and reaching Daru at 1[illegible].23.

Tues. Mar. 24. The second flight was pulled off today. This time we only got up at 5 o'clock. The Ford took off the water at 6.47; crossed the Ely at 7.05. This time we took a course which left us well to the east of the Grindstone River and bore on the notch in the mountains through which it emerges and which Harris, patrol officer named the Devil's Face.

Today we made a few new discoveries. The course as a whole of north, east 310 degrees but with some easterly drift. And then we followed the River and the Dominion. Mountains which have not been explored yet. At 7.42 a.m. we crossed a small very blackish crater lake, and a few minutes later another larger lake which had previously been described. The Imperial Mount Mountains became clearly visible but clouded over again soon. On the western foothills of the mountains we saw flight of a large quantity of extremely and continuous garden patches. Also between crater lake and the other a sizable river flowing over a water fall, whose course I could not follow.

At 8 o'clock we passed what appeared to be a small broken out crater beneath us and on the left, at 8.00 Diamond Mountain. Some straight right from the plane, and on its slopes the above mentioned gardens appeared. At 8.12 passed a strongly marked east-west rift, apparently a line of faulting but I could not tell direction of fall in it of water, even if there were any. We were flying 320 degrees. At 8.25 saw deeply fissured ravines to right. A very high limestone mass of mountains ahead and on right with its top in the clouds.

A loop of the Grindstone, the first sign of the river appeared for a moment half right. Series of parallel ridges seemed to incline from us to as away from the mass of limestone just mentioned. The Grindstone was for which, as I have mentioned earlier, we were headed now appeared very near. We were flying at about 1300 metres now. Over to the left the Blooper, Gare, and behind them the low range and a most of larger mountains could be seen rather clearly. The great limestone mass now filled the entire horizon from east of north to due east.

At 8.50 we entered the Grindstone basin through the. An immense gulf immediately appeared below and to the right, and beyond on the same side a deep valley with a water fall dropping from the top of the limestone range. That valley was crossed at 8.55, and shortly afterwards another much larger and deeper rift gorge coming in from the northeast, nearly twenty miles in length was reached at eight fifteen. In the bottom of that gorge was one of the main tributaries of the Grindstone. At 9 o'clock our course was changed a little west and we skimmed among the ranges with the floor immediately rather log clothed on our right and the inner face of the Blooper range to the left. The Blooper is joined by an eastern spur from the range which divides the Grindstone basin from the Stinkland basin. Over that ridge we flew, and down the basin out the Palmer to the gap between Blooper and Gare, through which Palmer pushes its way to the lowlands south. The plane at once changed course and turned west along the northern front of the Gare range to find the place where the fly similarly comes out of the mountains. Both Palmer and Fly come out through immediately deep gorges similar to that of the Grindstone. Fly turned into the mountains once more behind. The fly gap and passed in the Bol, tributary of the Fly along the northern face of the Gare. That range definitely recognized and between the Gare and the gap Stinke a connecting ridge some 6000 feet above sea level separated the basins of the Bol and the Palmer. The above description is doubtless confusing, but the drawing that goes with this account ought to help clear the matter up.

For the second time we flew out through the Palmer gap, and this time dipped down from 6000 metres to examine the possibilities of either one of the lands of the Bloop, Palmer or Fly for landing on. One or two spots offered distinct possibilities of success. We flew up and down the rivers just on a level with the tops while we examined for depth of water, absence of snags, etc.. The job finished we cut across to the west to take a look at the Stinke or Fedd River. That one proved to be a. g. so we turned for home, getting a distinct glimpse of Mount Murray at 10.40 and reaching Dairy at 1.25.

Wed. Mar. 25. The third trip was planned so that we might look over the new Lake Marguerite and also get a closer view of the Leonard Murray Mounains, after which we would head for home. It was suggested too that since Champion has shorty shortly to patrol the Turama River we should go up by way of that stream to its source and after seeing the Lake and the Mountains, return down the Bamu River. We left aru at 6.58, crossed the mouth of the Fly, the wide delta portion between 7.12 and 7.29, the mouth of the Bamu at 7.34 to 7.39; and entered the Turama just at 8 o'clock.

Almost at once I noticed a line of hills well developed between the Turama and the next river to the n.e. the Kikori. We raced up the Turama keeping the hills always on our right, until at 8,17 we began to edge over onto the ridge, which proved on examination to consist wholly of limestone whose surface was etched into millions of hummocks and hollows a hundred feet high or deep. The whole was covered with forest. The bearing from the mouth of the Turama to the Leonard Murray was 300 degrees. To the south stretched theplains that reach away across the lower parts of several rivers as far and the Fly and beyond. Over the now broadly extensive limestone area we could see theKikori river and beyond it a series of great mountains rising tier on tier to the clouds.

A smother of cloud and mist obscured the view for a few minutes, but with its passing Leonard Murray stood out clearly with every line clean cut. It took just one glance to see that the so-called range was in reality a huge volcanic crater with one side torn out. While we were still some ten miles or so from it we curved around and flew east by north bearing on Mt. Lalibu to discover the location of the new lake. No difficulty was found in locating the lake which appeared about thirty miles from the volcano. A long narrow piece of water deep and dark, long and narrow with an island in it and several points of land paralleling the long sides. It was placed among great limestone ridges but had many places where the shore was flat and extensive. At the ends especially immense swampy meadows or grasslands could be made out. A number of native houses were to be seen both on the shore and on some of the islands.

Leaving the lake whose length (some six miles) ran northwest - southeast, the ship was headed back for Mt. Leonard Murray, our object being to get a glimpse into the crater. We passed close by its nw corner at 3200 meters, high enough to see that it was extinct and that the inner walls of the crater were very steep; then started back on a southerly bearing to trace the Bamu river (on which yesterday's waterfall seen at 7.55) occurs. The course of the Bamu and the Awarra which we picked up shortly afterwards, indicated that we were flying above a ridge extending out from the base of the volcano. Some time later both rivers turned southeast and united to enter the Bamu estuary. Daru was reached about 11.10 a.m.

Spent the afternoon with Cahmpion trying to get our newly a cquired information into map form.

Thur. Mar. 26. Planned a trip to passstraight up along the eastern edge of the Leonard Murray crater onto the plateau of limestone seen half right during the second trip; thence west to observe the Fly basin from greater altitude; and then home"as the crow flies". Before we reached the Fly delta however I inadvertently pulled a switch on the redio before something else and something still else burned out. So we had to return. The set was not especially damaged but it could not be repaired until too late to make a fresh start.

A couple of parachute drops were made in the afternoon also a rice bag enclosed in a second, loose large bag. One chute failed to open. The second had about twenty yards of drift only and the rice bag was successfully landed.

Champion and I spent the entire afternoon mapping. In the evening Brass, Champion, Rand and I correlated our notes on the first three trips with the idea of eliminating errors of observation and filling up individual omissions.

The plane leaves tomorrow with Archbold, Rogers and Champion for Port Moresby. Champion will return later by boat and we hope to run the deferred trip about April 5th. A summary of the whole geographical layout will be drawn up by me later on.

Mar. 26. The third trip was planned so that we might look over the new lava formations and also get a closer view of the beaned Murray Mountains, after which we would head for home. It was suggested too that since Champion had about shortly to portray the Turners River we should go up by way of that stream to the mouth and after seeing the lava and the Countains, return down the Lagoon River. We left arm at 8.15, cross on the south of the Fly, the wide delta portion between 7.12 and 7.24, the mouth of the Lagoon at 7.43 to 7.52; and entered the Turner just at 8 o'clock.

Almost at once I noticed a line of hills well developed between the Turner and the parallel River to the s.e. the Hound. We reach at the Turner leaving the mills always on our right. Until 8.17 we began to see over onto the Hound, which proved on examination the original wholly of limestone whose surface was echoed into millions of hummock and hollows, bunched fast high or deep. The whole was covered with forest. The bearing from the mouth of the Turner to the Lagoon Murray was 300 degrees. To the point straddled the plains that reach away across the lower parts of several rivers as far and the Fly and beyond. Over the now bleakly extensive limestone area we could see the Melford River and beyond it a series of great mountains rising 3,0? on tier to the clouds.

A smoke-pot island and also observed the view for a few minutes, but with the pending Lagoon Murray stood out clearly with every line open out. It took one glance to see that the so-called range was in reality a huge volcanic crater with one side torn out. While we were still some ten miles or so from it we curved around and by one, by mouth bearing of 8.[illegible] to discover the position of the lava lake. No difficulty was found in locating the lava which appeared about twenty miles from the volcano. A long narrow piece of water deep and dark, long and narrow with an island in it and several points of land overlooking the long sides. It was placed among great limestone ridges but had many places where the shore was flat and extensive. At the ends especially immense swampy meadows or grasslands could be made out. A number of native houses were to be seen both on the shore and some of the islands.

Leaving the lake whose length (some 6 to 8 sq) was northwest - southeast, the only way needed been for Mt. Lagoon Murray, our object being to get a glimpse into the crater. We passed close by its northern as 2000 metres, high enough to see that it was exhibit and that the lower walls of the crater were very steep; then circled back on a southwesterly bearing to cross the Lagoon River (on which Yesterday's wireless had been at 7.55) occurs. The course of the Lagoon and the Lagoon which we placed up shortly afterwards, indicated that we were flying above a place extending out from the base of the volcano. This time later both rivers surface course stopped until to enter the Lagoon estuary. Here was reached about 11.10 a.m.

Spent the afternoon with Champion trying to get our newly a plotted information into map form.

Thur. Mar. 28. Planned a trip to passengight up along the eastern edge of the Lagoon Murray crater onto the plateau of Limestone seen half right during the second trip; hence west to observe the Fly beyond from greater altitude; and home as the crow flies. Before we mounted the fly with however I inadvertently pulled a switch on the radio before something else and something still else burned out. So we had to return. The set was not especially damaged but it could not be repaired until too late to make a fresh start.

A couple of parachute drops were made in the afternoon also a piece bag released in a second. Does large bag. The cycle failed to open. The second had about twenty yards of trail only and the rope was successfully tested.

Champion and Hunter are making arrangements in the morning bags. Champion. Hunt and I contributed our notes on the first trip with the idea of eliminating errors of observation and filling up individual omissions. The plane leaves tomorrow with Hubbold, Hogan and Champion for Port Moresby. Champion will return later by Port Moresby to run the delayed trip about April 5th. A summary of the more sensational flyout will be drawn up by me later on.

Fri. Mar. 27. Everybody got up a bit late, especially Rand, Brass and I. We were not on deck until 7.30. The ship only left about 8.45.

The weather has changed. Insteaxd of the fine clear wea. we have been having for our flights into the hills we have a morning of rain. Rogers just radioed us that they are going to stop for $\frac{3}{4}$ hour at Yule island which is about 60 miles this side of Port Moresby. They return here to Daru either tomorrow of Sunday.

In the afternoon Rand, Brass and I got together and put together all our data on the Second Flight (to the mountains north of the Fly and the Strickland) with Champion's bearings. The work took until nearly five oclock.

Sat. Mar. 28. ~~Sunday~~ Turned out a soaking wet day. As above, we worked over our mountain data, this time doing the Third Flight (to the Turama river, Mt. Leonard Murray and Lake Marguerite). That work occupied until about 2.30 in the afternoon. The whole gang was invited out in the evening to play "bridge" and poker at the Leydens'. We must manage to give a party ourselves soon. In the evening Archbold came through on radio to say that they would be returning on Sunday.

Sunday, Mar. 29. We managed to get the observations made during the First Flight (to the headwaters of the Fly river, lowlands only, and the Lake Murray) just before the aeroplane arrived.

It seems that the radio man at Port Moresby picked up my broad cast made during some of these trips and rebroadcasted them, so somebody in America may have received part of the stuff.

Five small bats, apparently Pipistrellus found in crop of small blackish falcon. Saved skulls in formalin. Suggests that the falcon hunts either at dusk or at dawn when the bats fly.

Mon. Mar. 30. Have spent the morning going through the Government annual reports on territories in and adjoining the area in which we are interested. Yesterday we rigged up our electric lights: two big 200 watt bulbs that light the whole house. Rain most of yesterday. The plane brought no mail with it on Sunday from America. Apparently the "Montoro" missed connections down south, because Archbold waited for her.

Tuesday, Mar. 31, 1936 Have to wind this letter to a close. Am going with Beach and Julstedt across the Strait up the Oriomo river for a few days. Have to get packed up, and the Thursday Island boat leaves before we get back.

Fri. Mar. 27. Everybody got up a bit late, especially Paul, Brass and I. We were not on deck until 7.30. We only left about 8.45.

The weather has changed. Instead of the fine clear we have been getting for our flights this week we have a morning of rain, hopeng just reduce so that they are going to stop for 2 hour at Vuie island which is about 60 miles this side of Port Moresby. They return here to-day tomorrow or monday.

In the afternoon Paul, Brass and I got together and put together in our cabin on the Sacom flight (to the mountains north of the fly) and the Bulkeland with Champion's business. The work took until nearly five o'clock.

Sat. Mar. 28. Morning turned out a bottom wet day, as above, we worked over our mountain data. This time doing the Lolo flight (to the Turuma river, Mt. Lamberd Murray and Lake Murpurile). That took occupied until about 2.30 in the afternoon. The whole gang was invited out in the evening to play "bridge" and "poker" at the Lovings'. He must manage to give a party tomorrow soon. The evening (nobodd came through on radio to say that they would be returning on Sunday.

Sunday, Mar. 29. We managed to get the observations made during the first flight (to the headwaters of the Fly river, Lowlands on y, and the Lake Murray) just before the morning arrived.

It seems that the radio mechanic Port Moresby picked up my broad band radio during some of these trips and removed it then, so somebody in Australia may have received part of the stuff.

Five small bats, apparently Pteropus, come in and of small disaster indoor. Seems really is normal. Suggests that the lemon bats either at dusk or at dawn when the bats fly.

Mon. Mar. 30. Have spent the morning going through the Government annual reports on territories in and adjoining the area in which we are at the moment. Yesterday we rigged up our electric lights: two big 500 watt bulbs that light the whole house. Rain most of yesterday. The plane brought me mail with it on Sunday from Australia. Apparently the "Lorraine" mislead connections down south, because Krobloh waited for her.

Tuesday, Mar. 31. 1935 Have to bring back letter to a close. Am going with Beech and Dulaney across the mountains to the Orinoco river for a few days. Have to get packed up, and the Tuesday Island boat leaves before I get back.

April 5, 1936. The following is typed from pencil notes taken from Apr. 1 to 4 inclusive, while on short trip up the Oriomo River to Wuroi and Dogwa:

Wed. Apr. 1. Left Daru at 7 a.m. on Dr. Vernon's gasoline boat the Veri-veri, with Beach, Rogers and Julstedt, and a dozen of the boys. We were going up to get a motor generator and other material from the abandoned Oriomo Oil Company's place at Dogwa.

We reached the mouth of the Oriomo a cross the channel which lies between Daru and the mainland at 7.30 a little too late for the best of the tide, in consequence of which we ~~had~~ took until nearly 3 p.m. to reach Wuroi. The tide runs all the way up to Wuroi, and the river is very winding, the total distance is nearly 40 miles. The lowest reaches of the Oriomo river are bordered with mangrove swamps with their characteristic slimy mud banks, covered at high tide; next several miles of Nipa palm, their bases submerged at high water, but their great fronds welling up to form a dense screen of foliage fifteen to twenty feet high, and their fruiting heads the size of coconuts mostly afloat. Beyond the Nipa began rain forest (that is what Brass calls it), or gallery forest, as we all it in south America, with the banks of the river no longer so muddy and all the mangroves left behind. Several interesting palms appear in that forest, among them one very tall, slender and gaceful head and shoulders above the general level of the tree tops, of which Brass had asked us to get the fruit (but when we had cut several down it was found that they were out of season in April). The banks showed cut in a few places and appeared to be of shaley clay with the strata horizontal. No mammals were seen but some herons, a pair of tree ducks, hornbills, ibis, etc.

All the way up (and down again) Rogers and Julstedt were set to get something with rifle or shotgun. We didn't however. The boys sprawled around asleep for most of the distance. We had a fire box on the boat and I had Mahabudi our cook boy make tea and get us some lunch about 1 ock.

Wuroi is a small clearing on a ridge which abutts on the river, where there is a large galvanized iron store house, and a couple of shelter shacks, one in which old machinery is stored the other for shelter for boys. We unloaded everything and made ourselves comfortable in the big house, spending the night there. The Wuroi clearing is a little grassy opening in the rainforest edging the river, and from it a corduroyed road runs southwest away from the river, coming out in a few minutes on tea tree savanna, in the direction of Dogwa six and a half miles away.

Julstedt and Rogers started out up the trail to try to shoot something, the former getting two little birds. I walked out after them a bit later, as I wanted to see how the trail was for night collecting. Wallabies were evidently rather plentiful, judging from the way the grass of the savannas was beaten down. That evening I shot three, but the moon was rather strong and their eyes did not shine particularly well. I left them lying on the trail to be picked up and put on the wagon which the boys were to push in to Dogwa next morning.

Thur. Apr. 2. Saw the cart loaded and covered, then went ahead. The trail follows a ridge practically all the way, just a low rolling type of ridge, with Eucalyptus-Tea-tree savanna and of course not a drop of water all the way. There were quite a lot of birds, mostly noisy parrots and sulphur-crested cockatoos. I saw only one wallaby and he had already seen me and was bounding away at a prodigious pace. Reached Dogwa about two hours later.

A big house with verandas on all four sides of it, the customary tin roof, and the whole badly run-down, with termites all through the timbers and wasps building mud nests everywhere. The house, near which are half a dozen smaller houses and shelters is finely located on the top of an open savanna ridge, from which the land falls gently away on three sides. The road comes in from the north, and the best view is had to south across arather large pond fringed with red Azolla and with water lily pads floating it, towards a great grass-covered ridge half a mile away. The hollows contain tea tree savanna for the

April 5, 1956. The following is typed from pencil notes taken from Apr. 1 to 4 inclusive, while on short trip up the Orinoco River to Nuroi and Dogwa.

Wed. Apr. 1. Left Puru at 7 a.m. on Dr. Vernon's gasoline boat the Vert-vert, with Beach, Rogers and Tulstedt, and a dozen of the boys. We were going up to get a motor generator and other material from the abandoned Orinoco Oil Company's place at Dogwa.

We reached the mouth of the Orinoco a cross the channel which flies between Puru and the mainland at 7.30 a little too late for the best of the tide, in consequence of which we took until nearly 5 p.m. to reach Nuroi. The tide runs all the way up to Nuroi, and the river is very winding, the total distance is nearly 40 miles. The lowest reaches of the Orinoco river are bordered with mangrove swamps with their characteristic slimy mud banks, covered at high tide; next several miles of Mpy palm, their bases submerged at high water, but their great fronds wafting up to form a dense screen of foliage fifteen to twenty feet high, and their fruiting heads the size of coconuts mostly afloat. Beyond the Mpy began rain forest (that is what Rogers calls it), or gallery forest, as we call it in South America, with the banks of the river no longer so muddy and all the mangroves left behind. Several interesting palms appear in that forest, among them one very tall, slender and graceful head and shoulders above the general level of the tree tops, of which Rogers had asked us to get the fruit (but when we had cut several down it was found that they were out of season in April). The bank above cut into a few places and appeared to be of single clay with the strata horizontal. No caves have been but some brown, a pair of tree ducks, kingfisher, ibis, etc.

All the way up (and down again) Rogers and Tulstedt were set to get something with rifle or shotgun. He didn't succeed. The boys swarmed around salsep for most of the distance. We had a fine cook on the boat and I had Marshall our cook boy make tea and get us some lunch about 1 o'c.

Nuroi is a small clearing on a ridge which abutts on the river, where there is a large galvanized iron store house, and a couple of shelter shacks, one in which old machinery is stored the other for shelter for boys. We unloaded everything and made ourselves comfortable in the big house, spending the night there. The Nuroi clearing is a little grassy opening in the rainforest edging the river, and from it a corduroyed road runs southwest away from the river, coming out in a few minutes on the tree savanna, in the direction of Dogwa six and a half miles away.

Tulstedt and Rogers started out up the trail to try to shoot something, the former getting two little birds. I walked out after them a bit later, as I wanted to see how the trail was for night collecting. Mallaches were evidently rather plentiful, judging from the way the grass of the savannas was beaten down. That evening I shot three, but the moon was rather strong and their eyes did not shine particularly well. I left them lying on the trail to be picked up and put on the wagon when the boys came to push in to Dogwa next morning.

Thur. Apr. 2. Saw the cart loaded and covered, then went ahead. The trail follows a ridge practically all the way, just a low rolling type of ridge, with friendly rung-tree savanna and of course not a drop of water all the way. There were quite a lot of birds, mostly noisy parrots and sulphur-breasted cockatoos. I saw only one malaby and he had already seen me as he was bounding away at a prodigious pace. Reached Dogwa about two hours later.

A big house with verandas on all four sides of it, the customary tin roof, and the usual badly run-down, with termited all through the timbers and wasps building mud nests everywhere. The house, near which are half a dozen smaller houses and shelters is finely located on the top of an open savanna ridge, from which the land falls gently away on three sides. The road comes in from the north, and the best view is had to south across another large pond fringed with red Aroids and with water lily pads floating in, towards a great grass-covered ridge half a mile away. The hollows mountain tree savanna for the

most part, with one big patch of rain forest about a mile away to the sw. Due west there is a big clump of coconuts and another clump of trees surrounding a sink hole in the limestone which is reputed to underly the entire region.

The place is supposed to teem with wallabies, and to some extent it does. That night I put them up in all directions, but the moonlight made it hard to see their eyes and I shot only two.

We made ourselves very comfortable there, and I set out some fifty traps, , my two original boys, Aia and Gororo, being with us. The climate is delightful, a pleasant cool breeze blowing through the day, and the nights, almost cold. No sandflies and next to no mosquitos.

Friday, Apr. 3. I was disappointed that the traps brought nothing in. However we skinned the two biggest wallabies (they weigh about 70 lbs. I judge.) And a man brought me a big fruit bat. Archbold had worked the place pretty thoroughly a few years before for nearly a month, so I was there chiefly to acquaint myself with the lay-out of the place, although of course I wanted what mammals I could get during our short stay.

Natives brought in baskets of bananas (green), taro, papaiya and sweet potatoes. which we appreciated very much. They cost a few sticks of tobacco only.

Saturday, Apr. 4. Packed up and left about 9 oclock. It had rained all night. In the traps a young Uromys. Again I walked ahead. Rogers had taken out the motor generator the day before, so we had only about the same load to take back as we had brought in with us. Weather cloudy and cool. We reached Wuboi without incident and piled on board the Veri-veri and cast off just about at flood tide, which was almost perfect for getting us downriver by sunset. Crossed to Daru, getting ashore about 7.30 in the evening.

The story of the Oriomo Oil Co. is interesting. McKlean manager is said to have heard of oil indications up the river. Hydrogen sulphide emanations (which actually exist) and an oily film on the river (probably imaginary). Any how a company was put together and stock sold like peanuts at Coney Island. Boat after boat of stores and provisions, surveyors, drillers and whatnot were shipped in. Several drills started at once, and when they got down two thousand feet a barrel of oil was dumped down one of the casings unbeknown to McKlean. Large stockholders, and other interested parties were assembled and when the other drills got near the 2000 foot stratum everybody stood by to watch for the expected gusher... Instead the drills hit granite a few feet lower down. and so en ded the Oriomo venture.

It is written in the periodical 'Oil', copies of which we found about that 20,000 wallabies were shot by hunting boys to supply the needs of the laborers at the scene of operations, over a period of about three years.

Sunday, Apr. 5. Nothing much to relate. A rather wild party got under way in the evening, entirely unpremeditated, rather the way storms develop out of nothing.

Monday Par. 6. Bad news. Some doubt has been thrown by Rogers on the quality of the gasoline supplied by Vacuum Oil for the plane. We wirelessed them at Melbourne last night to give formula and explain means of testing for lead content.

Went around and had a chat with Dr. Vernon. He told me that while driving with Beach in the Oriomo truck (of former days) along the trail we walked in along last week, a big wallaby jumped right onto him in the truck and practically knocked the wind out of him.

Storm from the northwest during the night.

Tues. Apr. 7. Went out with Brass to see how he works his plant-collecting. We went along past Dr. Vernon's place and then turned off to the left. Saw a number of orchids but not in flower. Very hot. We did not get back until half past eleven. In afternoon went across to Gov't office to read up on the Annual Reports, in which are included many short reports of expeditions into the interior.

Archbold developed film most of day. A number of excellent pictures already.

In the evening had Port Moresby on the radio. Reception much better. Two messages in and one out. About eight oclock the "Laurabada" carrying the acting governor of Papua arrived. He is Mr. Champion, father of Ivan Champion who made the flights with us last week, and of Claud Champion who is on the Government staff here at Daru. The last with his wife has just returned from four months leave of absence.

Our station is developing rapidly. Sheds have been built to house the aeroplane gasoline, to contain the generator for electric light and radio power, and a workshop by the plane for Rogers has been completed. The house is now wired for electricity and a big radio mast is going up today. In fact there is so much mechanical activity going on that I begin to wonder when something will be accomplished about the expedition proper!!!

The spare engine for the plane, covered by a big tarpaulin, is sitting out in the yard, and Rogers has been overhauling the second generator which we brought back from Dogwa on Saturday.

Wed. Apr. 8. Today spent the morning reading "A Prince of India". Arranged in the afternoon with Brass for us to take a canoe and our boys and go across to the mainland tomorrow collecting and to spend the night at a mission village named Old Mawatta.

The place has been seething with activity: Rogers and Julstedt working on the ship and radio; Rogers fixing up the generator from Dogwa; Archbold cataloguing photos; Rand skinning birds; Brass and I getting ready for the trip. A message from Sydney advised us that they didn't know how to test gas and couldn't understand what was the matter anyhow, and please ship back the two drums of leadless gasoline. What we'll do next I don't know.

Thur. Apr. 9. Rand and Archbold with Dr. Vernon are going out in the "Pitt" to the reef the other side of Bobo Island, taking with them some tow lines, a couple of rifles and materials for collecting sea birds. They also carried one of the field radio sets.

Heavy rain during the early part of the morning delayed the start for both parties, but eventually Brass and I with our boys left in a canoe with outrigger and the others went on board their boat. We caught the tide very nicely and were across the other side and having our lunch beofer the "Pitt" had gone anywhere at all. We watched her slow progress all through the afternoon around the end of Daru and across the channel to Bobo, and that evening we could tell by the bright light of one of the gasoline lanterns that she was anchored off the eastern point of the latter island.

Old Mawatta is a village of six houses and a "mission". No missionary lives there, but one may stop by once in a while and the house is rather larger than the others andhas a veranda of split cane flooring. The village is really built on a high sandy beach about a hundred yards across, having the sea in front and an extensive swamp behind it, where the water lies thigh deep. Along the back of the beach stand irregular masses of big trees Calophyllum, rather fig-like, with knobbly trunks and thick leaves, and quantities of rather dense grass with the sand dune vine Ipomaea twining through cover most of the ground. The beach proper is of fine white sand, and the exposure at low tide is very ample - nearly a quarter of a mile. Along the beach, besides the Calophyllum, are several stands of coconuts, evidently old plantations.

I took a walk along the shore after lunch and before sending any of my four boys out with their traps to get an idea of the possibilities of the place.

Tues. Apr. 7. Went out with Bress to see how he works his plant-collecting. We went along past Dr. Vernon's place and then turned off to the left. Saw a number of orchids but not in flower. Very hot. Hardly not get back until half past eleven. In afternoon went across to Govt offices to read up on the Annual Reports, in which are included many short reports of expeditions into the interior.

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Wed. Apr. 8. Today spent the morning reading "A Prince of India". Arranged in the afternoon with Bress for us to take a canoe and go across to the mainland tomorrow collecting and to spend the night at a mission village named Old Warwick.

The place has been seething with activity: Rogers and Malatesh working on the chip and radio; Rogers fixing up the generator from Boera; Archbold catalouging motors; Hand skinning birds; Bress and I getting ready for the trip. A message from Sydney advises us that they didn't know how to test gas and couldn't understand what was the matter anyhow, and please ship back the two drums of leadless gasoline. What we'll do next I don't know.

Thur. Apr. 9. Hand and Archbold with Dr. Vernon are going out in the "Fitt" to the reef the other side of Bobo Island, taking with them some tow lines, a couple of rifles and materials for collecting sea birds. They also carried one of the field radio sets.

Heavy rain during the early part of the morning delayed the start for both parties, but eventually Bress and I with our boys left in a canoe with outrigger and the others went on board their boat. We caught the tide very nicely and were across the other side and having our lunch before the "Fitt" had gone anywhere at all. We watched her slow progress all through the afternoon around the end of Daru and across the channel to Bobo. And that evening we could tell by the bright light of one of the gasoline lanterns that she was anchored off the eastern point of the latter island.

Old Warwick is a village of six houses and a "mission". No missionary lives there, but one may stop by once in a while and the house is rather larger than the others and has a veranda of split cane flooring. The village is rather built on a high sandy beach about a hundred yards across, having the sea in front and an extensive swamp behind it, where the water lies knee deep. Along the back of the beach stand irregular masses of big trees Calophyllum, rather fig-like, with knobbly trunks and thick leaves, and quantities of rather dense grass with the sand dune vine Ipomoea twining through cover most of the ground. The beach proper is of fine white sand, and the exposure at low tide is very ample - nearly a quarter of a mile. Along the beach, besides the Calophyllum, are several clumps of coconuts, evidently old plantations.

I took a walk along the shore after lunch and before sunrise any of my four boys out with their traps to get an idea of the possibilities of the place.

Shot a sparrow hawk among some Pandanus trees, of which scattered individuals are also to be seen along the shore. Later went back and set the boys to putting out traps. It was the first time out for two of them, so I sent one with each of the two more experienced boys. Then went down along the beach, for the tide was now nearly low, to try for some bird meat. Shot a large heron and a willet. And back at the house a big black cockatoo out of a great dead tree. Brass went back through the swamp collecting plants.

A couple of the village men came with a few coconuts to sell. We bought them for a couple of sticks of tobacco. And in the evening before sundown we sat watching the "Pitt" off the end of Bobo. A bit later with the light going and supper on the table mosquitos began to swarm in. I walked down the beach with a headlight on, and got a shot off at some animals which I failed to find, so hope I missed him - pro bably a bandicoot. Back at the house found found that Brass had gone to bd, and the house was simply humming with mosquitos, fully half of which were Anopheline. The beasties were so bad that our boys were driven to camp on the beach around a fire as far away from vegetation as they could get. Poor Blue who had come across in the canoe with us was nearly frantic all night long, and snapped incessantly at the swarms of tormenting insects, or else made rushes from one corner of the room to another in efforts to escape the overhanging cloud of bugs.

Friday, Apr. 10. Good Friday. Bright and sunny; and as the light grew stronger I could see mosquitos clustering thickly over the outside of the net. For several hours afterwards the room was full of skeeters when outside none were to be noticed

The traplines brought in eight mammals, two species of Rattus, brahhyrhinus and ringens, Melomys muscalis, and a Bandicoot Echimypera. The latter had three pouch young. Brass went out, and we had not finished skinning when he came back. By thattime the tide was well in and nearing high and the canoe afloat, so we bundled all our kit on board and headed for Daru, planning to get as far across as possible before the tide should turn and set against us. A few squalls with rain caught us, but we made good time and got back for lunch. Nearly across, we saw the "Kono" take a fly around, and head out over the back of the island: we guessed that Rogers was going out to take a look at the "Pitt". He had Beech and Healy with him, as we learned later; and the boat was found still miles away from the reef. The plane came over to us and our boys tried to race the canoe against her.

In the afternoon I finished up the mammals: the bandicoot proved to have very delicate skin with hardly any cross fibers, as so many mammals with rather spiny hair often do. It was troublesome to take off.

We had the idea about 4 oclock of throwing a party for the inhabitants of Daru; and Goodness knows we owed it to them, for no one could have been pleasanter or more hospitable than our friends here. It took less than five minutes to decide. Invitations went out by boy, and acceptances were 100%. Ensued a feverish house-cleaning, making of cake (his one and only culinary accomplishment) by the cook-boy, hanging of cheesecloth curtains across the three "bedroom" doors, setting up of "bridge" tables, stringing of more electric light wires, and additional radio aerials. The guests arrived about 8.30. and everything went over "swell". About midnight the "Pitt" floated back on the tide, the trip to the reef having been abandoned.

Sat. Apr. 11. In the afternoon proposed a test of the field radio set from Beech's farm to our headquarters, a distance of only two miles. It was found that the base of the voltage divider, asbestos, was damp and high voltage leaking across. More corrections needed. Also receivers not too good.

Yesterday down on the sands of old Mawatta saw numbers of little crabs, very deep shelled creatures, holding their claws vertically downwards. They ran about gregariously in companies of forty or fifty, their legs touching so that they made a rustling sound. When they reached certain patches of sand that were roughened by the sand thrown out of crab holes each one as he came to his own hole went down into it.

Shot a sparrow hawk among some Pandanus trees, of which scattered individuals are also to be seen along the shore. Later went back and set the boys to putting out traps. It was the first time out for two of them, so I went one with each of the two more experienced boys. Then went down along the beach, for the tide was now nearly low, to try for some bird meat. Shot a large heron and a wallet. And beside the house a big black cockatoo out of a great dead tree. Birds went back through the swamp collecting plants.

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Yesterday down on the sands of old Bewatta saw numbers of little crabs, very deep shelled creatures, holding their claws vertically downwards. They ran about frequently in companies of forty or fifty. Their legs touching so that they made a rustling sound. When they reached certain patches of sand that were roughened by the sand thrown out of crab holes each one as he came to his own hole went down into it.

Sunday, Apr. 12. Easter Sunday. Due to the mix-up in the radio, and the trouble over gasoline it has been decided to try to charter a boat, the "Myra" to come from Moresby and carry the field party up the Fly River as far as Palmer Junction. We will carry provisions for two months, and after the first month we shall know definitely whether things are going to work out properly for us or not. The trail-cutting gang, Willis and Healy and their men and carriers will put up some shelters for us, aifter which they will leave Brass, Rand and me with our boys to carry on with our regular work of collecting. The plane will fly to Port Moresby tomorrow morning carrying Rogers and Rand and some of our radio equipment, the latter being for criticism of the radio men Franks and Searl at Port. Also we hope to have the latter build for us a special receiver similar to one already built for Champion who leaves tomorrow on the Vailala for the Bamu River.

Mon. Apr. 13. The plane got away in the midst of a heavy shower of rain. She had been gone an hour when we were surpirsed to hear her coming back again. It seemed that Rogers and Rand had forgotten to take along their microphone so were unable to communicate with us as neither knew any morse. As things turned out they must have had their transmitter all off tune for we never heard a word of them.

Spent the afternoon preparing for a week's stay down at Mabaduan, a territory with granite country rock, and very near the northern tip of Australia. Brass and I are going down there tomorrow on the "Veri-veri". It is about 30 miles from here. Besides my four boys I am going to take along Rand's three bird boys and work them as well. Brass undertakes to attend to commissariat and camp details in addition to his botanical work.

Am closing now as hope to have this letter get away on the "Good-will" to Thursday Island before our retunn from Mabaduan.

Sunday, Apr. 14. Easter Sunday. Due to the mix-up in the radio, and the trouble over gasoline it has been decided to try to charter a boat, the "Myrna" to come from Kamsby and carry the field party up the Ely River as far as Palmer Junction. We will carry provisions for two months, and after the first month as small more definitely whether things are going to work out properly for us or not. The trail-cutting gang, Willis and Neely and their men and carriers will put in some checking for us, a fact which they will leave Brass, Hund and me with our boys to carry on with our regular work of collecting. The plane will fly to Fort Moresby tomorrow morning carrying Rogers and Hund and some of our radio equipment, the latter being for criticism of the radio man Frank and Hund at Fort. Also we hope to have the latter build for us a special receiver similar to one already built for Champion who leaves tomorrow on the Valdizia for the Dawn River.

Mon. Apr. 15. The plane got away in the midst of a heavy shower of rain. She had been gone an hour when we were surprised to hear her coming back again. It seemed that Rogers and Hund had to gotten to take along their microphone so were unable to communicate with us as neither knew any morse. As things turned out they must have had their transmitter all off time for we never heard a word of them.

Spent the afternoon preparing for a week's stay down at Tabaquan, a territory with gravelly country rock, and very near the northern tip of Australia. Brass and I are going down there tomorrow on the "Ark-vert". It is about 30 miles from here. Besides my four boys I am going to take along Paul's three Nifu boys and work them as well. Brass wants me to attend to commissariat and camp details in addition to his botanical work.

In closing now as hope to have the letter out away on the "Goon-will" to Thursday leaves before our return from Tabaquan.

Mabaduane, Tues. Apr. 14. 1936. Mailed letter no 13 last night to catch the "Good will " for Thursday Island.

This morning Brass and I were packed up and ready to go by 7.30, but we decided to wait until the morning broadcast from Port Moresby just in case Moresby should give us the chance to talk to him and ask him to send for a minute to a low us to test the small receiver which we are using here. Sure enough he did, and his cw came in as clear as bell. The trouble with reception from the plane on the way to Moresby was explained as due to their transmitter being off tune. Rogers was to fly this afternoon at 2.30 and call Daru to test, and we arranged to listen for him from the boat as we went to Mabaduan. Actally we did not get to hear him, but the magneto of the engine was very noisy and perhaps killed his signals. But tonight ashore when Julstedt called me from Daru he came in very strong.

The Veri-veri left Daru at ten after nine. A strong breeze abeam combined with th boat's engin caused us to make such good progress that we were off the place about 3.30. We had next to go a short way up the Pahoturi River, land our baggage among mangrove mud (as it was then low tide) and have the boys carry it up to the government rest house of the village.

About five miles to the east of Mabaduane I noticed outcrops of ganite along a low promontiry jutting out into the sea. Granite too is all about us here. The great point seen from the aeroplane flight which we did not complete. was not Mabaduane at all (as we had supposed it) but a large island whose land must run up above 1000 feet. It lies yet another t enty miles to the west of us.

Mabaduane is quite the most peculiar village I have yet come across in Papua. It is a large population fo about 600 people, governed by a council of three or four men. It has its own Church, not really following any one denomination, but self-sufficient - the Mabaduane Church. Built on sandy soil among immense rounded boulders of ganite, it presents numbers of picturesque vistas. The houses, though naturally in native style, are well constructed and show the expenditure of far more care than is given usually to house construction by natives.

The committee or council was on hand to welcome us to the village, and we were shown the government house in which we intend to stay. Help was given in various ways: we were conducted to the top of the hill from which we wanted to get a general look around to assess the possibilities of the station. This evening three of the councillors waited upon us, and we had quite a discussion of hunting, etc. They speak English, broken of course, but quite understandable. The men are finely built fellows, much superior in physique to our Gossiagos. They are of course brownish black like the rest of the Papuan natives.

We soon had things ship-shape at the house, but it was too late to do anything about trapping.

Wed. Apr. 15. Had a good night. Some rain. Got the bird boys out to an early start. My trapping boys soon followed with 25 baited traps each, each boy to tap a locality noted during our look around from the hill-top. The hill, by the way, is probably not 200 feet high. Everything has settled down with remarkable speed and simplicity. After the return of three of the boys I went out with them myself and put out fifty more traps among the trees and granite boulders on the hill. Next we spread the bat net. The ground is clean and sandy so we had no not the trouble which we had before of the fine mesh tangling up with grass seeds and shrubs. The net is well set and within full view of our porch, so that we can flash a light on it once in a while.

Found rather a prize this morning: a mated pair of Ornithoptera the giant bird-winged butterflies and just beneath them the empty chrysalis from which the female had shortly before emerged. The chrysalis was on the small tree Macarangia a second growth tree belonging to the Euphoribaceae.

The bird boys brought in only five birds. Hope they will do better tomorrow. This afternoon took Aia with me to set out steel traps. We went a long way along a trail to the west leading first through old garden places (grasslands now), but at length coming out on Eucalyptus savannas with occasional patches of gallery forest. Everything very wet and swampy. It is now about the

Mabounne, Sunes. Apr. 14. 1952. Mailed letter no. 13 last night to catch the "Joo" will " for Tuesday Island.

Up. morning early and I were packed up and ready to go by 7.30, but we decided to wait until the morning breeze, from Port Moresby, put in case "Joo" enough give us the chance to talk to him and ask him to send for a minute to a fox us to test the small broadcast which we are using here. We enough to aid, and he came in a clear as bell. The trouble with reception from the plane on the way to Moresby was explained as due to their transmitter being off tune. Rogers was to fly this afternoon at 1.30 and will burn to test, and we arranged to listen for him from the boat, as we went to Mabounne. Actually we did not get to hear him, but the engine of the engine was very noisy and perhaps killed his signals. But tonight anyway when Julatit called me from Port Moresby came in very strong.

The Vari-Vari left Port at ten with a line. A strong breeze blown combined with the boat's engine caused us to make good progress that we were off the place about 3.30. We had next to go a short way up the Fahourni River, lain our baggage among mangrove mud (as it was then low tide) and have the boys carry it up to the government rest house of the village.

About five miles to the east of Mabounne I noticed outcrops of granite along a low promontory jutting out into the sea. Granite too is all about Mabounne. The great point seen from the aeroplane flight motion as did not complete, was Mabounne at all (as we had supposed it) but a large island whose land must run up above 1000 feet. It lies about ten miles to the west of us.

Mabounne is quite the most popular village I have yet come across in Papua. It is a large population to about 300 people, governed by a council of three or four men. It has its own Church, not really following any one denomination, but all-sufficient - the Mabounne Church. Built of sandy soil among immense rounded boulders of granite, it presents numbers of picturesque vistas. The houses, though naturally in native style, are well constructed and show the amenities of far more care than is given usually to house construction by natives.

The committee of council was on hand to welcome us to the village, and we were shown the government house, in which we intend to stay. Help was given in various ways; we were conducted to the top of the hill from which we started to get a general look around to assess the possibilities of the station. This evening three of the councillors visited us on us, and we had quite a discussion of hunting, etc. They speak English, broken of course, but quite understandable. Has men are finely built fellows, much superior in physique to our Dobaweds. They are of course brownish black in the first of the Papuan native.

We soon had our sleeping bags up, but it was not dark to do anything about unpacking.

Sun. Apr. 15. Had a good night, some rain. Got the bird boys out to an early start. My treasure boys soon followed with 25 baited nets each, and by to tap a hopefully noted during an look around from the hill-top. The hill, by the way, is probably not 300 feet high. Here we had a settled down with remarkable speed and simplicity. After the return of three of the boys I went out with them myself and put out fifty nets across among the trees and granite boulders on the hill. Next we spread the bird net. The ground is clean and sandy so we had no not the trouble which we had before of the fine weed tangling up with grass seed and stumps. The net is well set and within full view of our porch, so that we can listen a light on it once in a while.

Found rather a prize this morning a mated pair of Dimorphoscelis the giant bird-eating tarantulas and just beneath them the empty carapace from which the female had shortly before emerged. The carapace was on the small tree Macaranga a second growth tree belonging to the Euphorbiaceae.

The bird boys got in only five birds. Hope they will do better tomorrow. This afternoon took the girls out to set out trap. We went a long way along a trail, spoke most leading first through old garden place (pineapples now), but it lengthened out to nearly one mile with occasional patches of gallery forest. Everything very wet and swampy. It is now about the

BING BOOK BOMB

height of the rainy season at Mabaduane and Daru. The characteristic feature of the savannas I have just described above is the giant nest of termites, great pinnacle-like structures, eight to ten feet in height. I suspect too that Brass will discover some new plants for the collection there. He remarks that he has already taken a number of typically Australian plants, that hitherto he has not found in New Guinea.

All the little boys and girsl of the village are out collecting insects and lizards, etc. for me. It keeps me quite busy making record of all the contributions so that when they have bought together enough specimens I can give each one some sort of gift.

Tonight at 5 Julstedt came through clearly again (in cw of course) and we learned that the Veriveri got back this afternoon and our notes to Archbold and Dr. Vernon had been delivered.

Mabaduan has ben settled about thirty years according to one informant, the people coming from the Binaturi river, and still earlier from Old Mawatta, the place we visited last week. Mabaduan streets are real. It has some; and at least one has a name (King Street). The new Chruch is built oft concrete blocks and has a tile roof. It seems to me that a white man must have governed that job. But close by us is a flag-staff with halliards and so forth (to which our aerial is now moored)? and a small monument of concrete commemorating the loss by cyclone of several Mabaduanites. The Stretets of the town are bordered with mango and coconut trees for shade and sustenance. In fact they have very large coconut plantations. In short the village is really wealthy and no inconsiderable resources(for Papua)

At ten p.m. Julstedt again came through (though fading a little) to say that the Mira is hired and will be at Daru some time after the 27th and the plane will be back tomorrow or Friday.

Thur. Apr. 16. Strong wind part of the night: possibly the season is shifting to southeast. That is due to happen any day, as with the sun moving steadily north to make the summer of the northern hemisphere, the northeasttrades withdraw and the southeast winds come farther north.

There is some story of Arabs having been wrecked near here and having intermarrid with the natives then inhabiting this place. One or two of the "councillors" have the appearance which one would expect under such circumstances. The names of three of the head men are: Abua, Cogiabu, and Bahliss. Other names I have picked up are Yamata and Tom (the latter need not be explained).

The rat traps yielded more poorly than I had hoped (before getting here), but four specimens were brought in: three Rattus ringens, one R. brachyrhinus.

The Mabaduane granite is a pyroxene granite in which the fledspar scrystals have reached lengths in some cases of two inches. It appears to be a true granite, unsheared, though displaying a certain amount of jointing. The exposed blocks have all become rounded in typical manner of the granites by weathering and by exfoliation. Its decomposition has provided the coarse, gritty sands which give the village such an aspect of cleanness. The granite apparently extends to a point about five miles to the east, which we noted from the boat. Westward no more is to be seen. In addition on the beach at the western end of the village there is an outcrop of what may be a highly metamorphosed sedimentary series, which originally contained rounded pebbles. Those rocks show what I think are true bedding surfaces, but are shot through with quartz and other alteration minerals. Moreover the sea has been working upon them. The flat island Saibai a few miles to the south of us (in Queensland territory, incidentally) is stated to have no granite exposures. The last mentioned rocks could conceivably be the sandstone beds of Daru after exposure to and intense baking by the hot granite intrusion. In that case however there would have had to be immense thicknesses of rock above them, since the very nature of granite is a rock which cooled far beneath the earth's surface.

This afternoon went up hill to try shoot a couple of birds (along the trap trail made yesterday). The mosquitos were so bad that I could hardly look about

[illegible] of the rugby passion at Madauan and Daru. The cinnamon-bark leaves of the savannas I have just described are a far cry from the giant of temperate zones, gnarled, knotted, eight to ten feet in height. I suspect too that Brass will discover some new plants for the collection there. He remarks that he has already taken a number of typically Australian plants, that although to be not found in New Guinea.

All the little boys and girls of the villages are out collecting insects and lizards, etc. for us. It keeps me quite busy making report of all the contributions as that when they have bought together enough specimens I can give each one some sort of gift.

Tonight at 8 [illegible] came through clearly again (in cw of course) and we learned that the Veriyerl got back safely afternoon and our notes to Arnhold and Dr. Vernon has been delivered.

Madauan has been settled about thirty years according to one informant; the people coming from the Bikanni river, and still earlier from Gia Mawata. The place was visited last week. Madauan airstrip are real. It has some and an issel one has a name (King street). The new church is built of concrete block and has a tile roof. It seems to me that a white man must have governed that job. But also by an [illegible]-staff with ballistrds and so forth (to which one aerial is now moored) and a small monument of concrete commemorating the loss by cyclone of several "adamantes". The streets of the town are bordered with mango and coconut trees for shade and ornament. In fact they have very large coconut plantations. In short the village is really wealthy and no inconsiderable resources(for [illegible])

At ten p.m. [illegible] came through, though fading a little; to say that the Mira is hired and will be at Daru some time after the 27th and the plane will be back tomorrow or Friday.

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There is some story of birds having been wrecked near here and having interrupted the mutiny then imbalting this place. One or two of the "conmaliors" have the appearance which one would expect under such circumstances. The names of three of the head men are: Abra, Dogiabu, and Ranlika. Other names I have picked up are Yamba and Tom (the latter need not be explained).

The rat trap yielded more poorly than I had hoped (before getting here), but four specimens were brought in: three Rattus ringens, one R. brevicaudatus.

The Madauan gravity is a prorone gravity in which the flagpoles seem to have reached length in some sense of the [illegible]. It appears to be a true gravity, un-bored, though displaying a certain amount of orbiting. The exposed blocks have [illegible] and by erosion. [illegible] has protected the [illegible] weathering gives the village such an aspect of [illegible]. The airstrip is [illegible] extends to a point about five miles to the east, which we need from the boat. Westward no more is to be seen. In addition on the beach at the western end of the village there is an outcrop of what may be a highly [illegible] sedimentary series, which definitely contained rounded pebbles. Those took also what I think are true bedding surfaces, but as [illegible] with [illegible] and other alteration minerals. Moreover the sea has been working upon them. The flat-island Eaglet a few miles to the south of us (in [illegible]) is [illegible] to have no granite exposures. The best monitored rock could conceivably be the sandstone beds of Daru after exposure to and intense baking by the hot granite intrusion. In that case however there would have had to be large thickness of rock above them, since the very nature of granite is a rock which cooled far beneath the earth's surface.

This afternoon went up hill to try about a couple of [illegible] (along the track that I was yesterday). The mosquitoes were so bad that I could hardly look about

for swatting at them. Birds were few up there. Next went west along the beach. The shore side is planted with quantities of coconut trees, some scattered mangrove trees grow on the seaward side a little below high tide mark. They are in sand in stead of the customary mud though. On way back met large flock of parrokeets and bagged a couple. Heavy shower developed once more.

A very old man of the village told us he remembered "Italia", which turned out to be D'Albertis the veteran Italian explorer of the Fly river. D"Albertis spent a long time at Katau the village from the present Mabaduane people came. To check up the old man, who had said that several Katau men accomplanied D'Albertis up the Fly, we asked him to give us the name of one of them. He thought the matter over and gave us a name which Brass looked up in his noted and found correct. Now D'Albertis was here in 1875 or 6, and the old man said he was just a picaninny then, so that makes the old fellow a shade over 60. His name is Awda.

Fri. Apr. 17. Went along the beach with light for about a mile. But saw nothing, and turned back when got far along between mangroves and coconuts. The village dogsraid us at night, climb the steps and make for the kitchen. Blue, instead of acting as policeman, apparently keeps open house for them. Last night Brass after chasing one out, got mad threw the entire steps down off the porch so that this morning no one could get either up or down.

Took a Macroglossus bat out of the bat net last night. Nothing caught in trap-line.

Rebaited a lot of the traps with shredded coconut. A bird boy brought in a lot of parrokeets which plan to use for bait in steel traps. Have everybody just now skinning birds, - mammal boys as well.

This afternoon a short way away in the village a great crying and roaring broke out among the people. It turned out to be the death of an old woman and the noise was a general sign of gief. It is still going on as I write.

The three eggs of a pheasant cuckoo were brought in by a bird boy Aulea. They had just begun to incubate. The nest was on the gound out at the savanna where the giant ant-hills are.

Brass brought in pieces of rock which look much like sandstone. They overlie the ganite on top of the hill. Thye appear to show no bedding planes whatever, are possibly not sandstone but pieces of the same granite greatly decomposed.

Three specimens of the "frog-mouth" a giant member of the night-hawk family with strong, horny beak were shot this morning in the savannas.

Another of the boys brought in a carpet snake about 7 feet long. It is being skinned, as it is too big to be pickled at this camp.

At 5 ock received Julstedt, who said that the 'plane had come at 1.10 p.m. and that there were 5 letters for me. That 's the best news I've had for some long time.

Sat. Apr. 18. Rain for half the night. Another Macroglossus in bat net. Two R. ringens, one R. brachyrhinus and two Melomys muscalis in traps.

Took a long walk out along the trail to the savannas; found most of it under water. Saw several pheasant cuckoos, and numbers of the gregarious parrokeet of which we have taken such a large number of specimens. The morning cleared off quite nicely about eleven oclock and the wind blew from the southeast.

Here, at Old Mawatta and at Daru quantities of water-rounded pumice is to be seenat the top of the highest reach of tides. It evidently represents material shot out of some volcano a considerable time ago in order for it to have become water-rounded, and it has gradually been accumulated and left at levels above ordinary tide level and in mangrove swamps.

At quarter to five rain again; the northeast has once more prevailed aginst the southeast "trade". Two long-necked turtles, little fellows, with green sea algae growing all over their backs have just been brought in. A little while ago all the ladies and children of the village under the able escort of Abua the Church councillor were brought to see the birds and mammals collected. You never saw such a mob or heard such a chattering. About once in each half

for awaiting at them. Birds were [illegible]. There, last week alone the beach. The shore side is planted with quantities of coconut trees, some scattered mangrove trees from on the seaward side a little below high tide mark. They are in sand in ahead of the cemetery and though. On my trail met large flock of parakeets and parrot a couple. Heavy, lower developed once more.

A very old man of the village told us he remembered "Italia", which burned out to be D'Albertis the veteran Italian explorer of the Fly river. D'Albertis spent a long time at Katau the village from the present Mabuiana people came. To check up the old man, who had said that several Katau men accompanied D'Albertis up the Fly, we asked him to give us the name of one of them. He thought the matter over and gave us a name which Frass looked up in his notes and found correct. Now D'Albertis was there in 1875 or 6, and the old man said he was just a youngster then, so that makes the old fellow a shade over 60. His name is Awia.

Tri. Apr. 17. Went along the beach with light for about a mile. But saw nothing, and turned back when got far along between mangroves and coconuts. The villagers cooperate as at night, walk the steps and make for the kitchen. Also, instead of noting as policemen, apparently keeps open house for them. Last night Frass after chasing one out, got mad turned the entire stage down off the porch so that this morning no one could get either up or down.

Took a macrolepidopter out of the net last night. Nothing caught in trap-line.

Baited a lot of the traps with smashed coconut. A bird boy brought in a lot of pyrotexts which plan to use for bait in steel traps. Have everybody just now killing birds, - mammal love as well.

This afternoon a short way away from the village a great crying and rending broke out among the people. It turned out to be the death of an old woman and the noise was a general sign of grief. It is still going on as I write.

The three eggs of a pheasant cuckoo were brought in by a bird boy Aulen. They had just begun to incubate. The nest was on the ground out at the swamp where the giant ant-hills are.

These brought in pieces of rock which look much like andesites. They overlie the granite on top of the hill. They appear to show no bedding planes whatever, are possibly not andesites but pieces of the same granite greatly decomposed.

Three specimens of the "frog-mouth" a light member of the night-hawk family with strong, heavy beak were shot this morning in the savanna. Another of the boys brought in a large snake about 7 feet long. It is being skinned. As it is too big to be packed at this camp.

A boy from Deniyeo Dreatest, who says that the plane has come at 1.10 p.m. and that there were 5 letters for me. That is the best news I've had for some long time.

Sat. Apr. 7. Rain for half the night. Another Macrolepidopter in bat net. Two P. ridgeway, one P. brachyphthma and two Melanoxa mussitia in trap.

Took a long walk out along the trail in the savanna, found most of it under water. Saw several pheasant cuckoos, and numbers of the gregarious parrokets of which we have taken such a large number of specimens. The morning cleared off quite nicely about eleven noloock and the wind blew from the southeast.

Here, at Old Awatta and at Tarn quantities of water-rounded pumice is to be seen at the top of the highest rocks of ridges. It evidently represents material sifted out of some volcano a considerable time ago in order for it to have become water-rounded, and it has gradually been accumulated and left at levels above ordinary tide level and in mangrove swamp.

At quarter to five rain again; the northeast has once grew-lied against the southeast "trade". Two long-necked turtles, little fellows, with green seaweed growing all over their backs have just been brought in. A little while ago all the ladies and children of the village under the wise account of the Church committee were brought to see the birds and taken in collected. You never see such a job or many such a chatter. Auggy once in small nail

hour there is a dog fight: usually a multiple fight, about five against one. The fight lasts at most about thirty seconds, then each participant goes about his business. The children here (and there are lots of them) are always at play. Marbles is perhaps the most popular game, but just chasing about, or running back and forth through puddles (they aren' overburdened with clothes) or hunting for mangos just fallen from the trees. One little fellow had his Father's fish spear and was busily jabbing the toes of all the bigger children.

Sun. Apr. 19. Fair all night. The southeast seems to be establishing itself gradually. So the paths should begin to dry up a bit today. Everything until now has been under water.

Four R. ringens and one Melomys muscalis were brought in this morning. Bright sunshine all morning. After clearing up the skinning went out taking photos.

Inspite of possessing their own Church, no service is held because the Samoan missionary who normally presides here is away. I asked one of the "councillors" whether they held the service ever. He said that if the missionary had left instructions so to do that they would have done it. The councillorship, it seems, descends from father to son.

Egoego shooting boy brought in a female wallaby (M. agilis). Blue was very funny about it. He took possession of it as though to say "that's the wallaby I've been hunting for days", and growled at all the boys who came near it. The animal appears identical to those I shot at Dogwa. It was taken a few miles outside Mabaduane on the tree savannas. The boy said he saw others.

In the afternoon took a walk out towards the "port", where we first came ashore. Also went a short way along trial to east of hill leading through second growth grasslands to gardens. Found the water considerably reduced. Hope that by another 24 hours, if dry weather continues, walking and collecting will be much improved.

Mon. Apr. 20. Shotan ~~Epiexiens~~ Pipistrellus at dusk last night; and in the small hours, about 2 a.m. heard the heavy swish-swish of flying-fox's wings. They turned out to be Dobsonia, two of which I shot. The eyes of Dobsonia shine strongly with an orange light, and I distinctly saw one feeding: A mango hung at the end of a long stalk, and the bat hung by its hind legs from the base of the stalk so that its mouth came on a level with the fruit. I begin to suspect that the eyes of the other fruit bat genus, Pteropus either do not shine at all or glow much less brightly.

Brass has gone out to the savanna taking his lunch with him today. My boys probably skimped the rebaiting of their traps yesterday (Sunday), as only two animals, R. brachyrhinus and Melomys muscalis were brought in.

It is to be noted that in Dobsonia the pubic arch of the male is as in most animals completely fused. In the female however the pubes remain widely separated, connection being gained solely by means of an elastic ligament, which joins the inferior (anterior) tips of the pubes.

Checked up Aia's trapline this afternoon. Also gve him a single-barrel shotgun for the first time. He declares he knows all about shooting. We'll see.

Brass came in to report that botanically the savanna is very uninteresting, being very limited in numbers of species. He brought a fish, shot with shotgun.

Tonight a Kiwai canoe or two arrived from Daru. Turtle is being cooked here and there about the village. Little boy accompanied by hist father came to present a coconut to us. Expremely shy and departed with all haste.

Tues. Apr. 21. Traps caught one R. brachyrhinus, one R. ringens. Another Macroglossus in the bat net, but this one caught in corner close to tree where net tied and attacked and killed by ants.

hour there is a dog fight: usually a multiple fight, about five at least one. The fight lasts at most about thirty seconds, then each participant goes about his business. The children here (and there are lots of them) are always at play. Marbles is perhaps the most popular game, but just dashing about, or running back and forth through puddles (they aren't overburdened with clothes) or sunning for mango just fallen from the trees. One little fellow had his father's fish spear and was busily jabbing the toes of all the bigger children.

Sun. Apr. 19. Fair all night. The sunrise at seems to be establishing itself gradually. So the rains should begin to dry up a bit today. Everything until now has been under water.

Four R. Stringers and one Melomys muscalis were brought in this morning. Fright auscultus all morning. After clearing up the situation went out taking photos.

Inquire of possessing their own Church, no service in hell because the Swan Mission-ary who normally presides here is away. I asked one of the "Councillors" whether they held the service over. He said that if the missionary had left instructions so to do that they would have done it. The communicants, it seems, descend from rather to son.

Possessing boy wrestling a frog. Fairly (M. sallis). Sins was very funny about it. He took it, action of it, thought to carry it to the walls by ben hunting for eggs, and crawling at all the boys who dared near it. The animal appears logical to those I asked at Pogwa. I had taken ten miles outside Habumuna on the tree savanna. The boy said he saw others.

In the afternoon took a walk out towards the port, where we first came ashore. It was a short way along trail to east by Mill Creek, through sandy growth of palands to gardens. Found the water definitely bedtown. Hope that by another 24 hours, if dry weather continues, we can be collecting will be much improved.

Mon. Apr. 20. Brown Kookaburra Phalacrallus ex cibus last night; and in the small hours, about 2 a.m. heard the heavy swish-swish of flying-fox's wings. They turned out to be Dobsonia, two of which I shot. The eyes of Dobsonia shine strongly with an orange light, and I distinctly saw one feeding: a mango hung at the end of a long stalk, and the bat hung by its hind legs from the base of the stalk so that its mouth came on a level with the fruit. I begin to suspect that the eyes of the other fruit bat genus, Pteropus either do not shine at all or glow much less brightly.

Brass has gone out to the savanna taking his lunch with his body. My boys probably skipped the meeting of their tribe yesterday (Sunday), as only two animals, R. brachyrhinus and Melomys muscalis were brought in.

It is to be noted that in Dobsonia the pubic arch of the male is as in most animals completely fused. In the female however the pubic remains widely separated, connection being paired solely by means of an elastic ligament, which joins the interior (anterior) tips of the pubes.

Checked up Abi's trapline this afternoon. Also gave him a single-barrel shot-gun for the first time. He declares he knows all about shooting. He'll see.

Name game in to report that botanically the savanna is very uninteresting, being very limited in numbers of a species. He brought a fish, shot with shotgun.

Tonight a Kiwai dance or two arrived from Daru. The le is being cooked here and there about the village. Little boy accompanied by that farmer came to present a coconut to me. Ceremonial affair and dewarted with all haste.

Tues. Apr. 21. Trap in tunnel one R. brachyrhinus, one R. rhinolophus, another Macroglossus in the bat net, but this one caught in corner close to tree where net had one attached and killed by ants.

Arranged a set of prices to be paid for mammals brought in good condition:
Echidna 10/ Scrub wallaby and Cuscus 5/ M. agilis, Dactylopsila, Dromicia, Isoodon, Echimypera 3/ Petaurus 2/ Uromys, Hydromys 1/6 all other bats and rats 1/-

Have made arrangements to go out to spend the night at a native hut near the savannas a couple of miles from here. Taking two boys with 20 traps and a local lad as a guide. Expect to do some light collecting, and hope for a cuscus or a kangaroo before the night is over. Leaving about 4 oclock, so I'll not hear Julstedt's broadcast.

The boys have developed quite an unsual technique for rebaiting trap-line: they carry the usual combination bait. And while putting that in the trap and se-setting the thing they chew up a piece of coconut. The last operation is the scattering of chewed nut over the surface of the trap.

Local names for some mammals (Kiwai language): Rattus ringens, Huapu-keakea; the former a wood rat; Rattus brachyrhinus, Genoho (a field rat); Echimypera, Iare (bandicoot); Uromys, Gahge (mosaic-tailed rat); Small bats, Pipite; Macropus agilis, Kipap (brown wallaby); M. oriomo, Woosaro (Red-legged wallaby); M. brunii, Bio-usal (Black or scrub wallaby).

Just as we were getting ready to leave, Taikudo brought in a female Echimypera (bandicoot) with three young in pouch. It had been killed by a rat trap in the mangrove line of traps near the "port". Pouch young: 2 females, 1 male.

Wed ~~Tues.~~ Apr. 22. Yesterday afternoon we set out at 4 p.m. sharp, taking my two boys and a local boy and his brother to show the way. We made good time and got to the house soon after 4.30. At once sent Kanamoia with one of the locals to set his 20 traps, and Aia with the other boy out with a gun to see whether they could pick up something before dark. I went out myself to locate the trails for jacking after dark.

The little house was nothing but a bark platform with a palm-leaf roof over it. It was placed at the junction of a savanna with a narrow strip of forest, flooded, which separated the house from Bahliss's garden, for the two local lads with us were Bahliss's children. We found a very few and scattered signs of wallaby, but nothing to indicate that they are common there. No signs of any other kinds of mammals. At 7.30 I went with my light over miles of savanna trails, and the only eyes I saw were those of two nightjars and a Dobsonia bat which flew over and was gone. Got back at 10.30 very tired from continually slipping about in the muddy water-covered tracks.

This morning took another walk around and then came back to Mabaduane. There found that Taikudo and Gororo had caught two Melomys and two Rattus. Another canoe has come in and Brass heard that the 'plane left yesterday for Port Moresby. I heard Archbold talking with Julstedt two nights ago (A. and Rand are in the "Veriveri" out at the Barrier Reef), and Archbold said something about J. going to Moresby to get some special transmitter fixed up.

A spotted cuscus (Phal~~enge~~angeer maculatus), female (paradoxically the females have not the spotted pattern), has just been brought in from across the River Pahoturi and about 5 miles away. It has been killed by dogs but seems to be otherwise in good condition. It is said to have had one puoch young one which escaped.

About eleven I was amused to watch a procession coming towards me across the square: Aia the hunter carrying nothing but his gun, stalking along with an air of utter satisfaction, the lad who had been with him, carrying a pole from which was slung a cuscus, next Kanamoia and the fourth boy carrying the baggage. They were a trifle crest-fallen to learn that a cuscus had arrived an hour earlier.

This afternoon another female wallaby was brought to us. And along about 5 ock a third, very large male. (both M. agilis).

After, or rather during supper Blue created a considerable disturbance by eating most of the tail of newly skinned wallaby which was heavily loaded with arsenic. We decided to give him a salt and warm water emetic at once. We at length got about two bottles of the stuff into him, but it took two boys to hold him, while Brass opened and held his mouth and I poured the dope down. Brass unfortunately

L. Ma. P. E.

Arranged a set of prices to be paid for mammals brought in good condition:

Fruitbats 10/ Torch wallaby and quokka 5/ Y. agilis, Dasyuroides, Ironclad, Leadbeater, Pademelons 2/ Dasyurus, Dryomys 1/6 all other bats and rats 1/-

Have made arrangements to go out to spend the night at a native hut near the savannas a couple of miles from here. Taking two boys with 20 traps and a local lad as guide. Expect to do some light collecting, and move for a season or longer before the night is over, leaving about a month, so I'll not hear Dulaney's broadcast.

The boys have developed quite an usual technique for trapping tree-lines: they carry the usual combination oil. But while putting that in the trap as-setting the trap they chew up a piece of coconut. The last operation is the scattering of chewed nut over the surface of the trap.

Local names for some mammals (River language): Native rabbits, Dasyurus-bandicoot the former a good pest; Native bandicoots, Genoco (a field rat); Ashbury's rat (bandicoot); Dryomys, Cange (moreto-tailed rat); Small bats, Ypkits; Macropus agilis, Ytep (brown wallaby); M. ordinus, Boorro (red-legged wallaby); M. bruntii, Ado-usal (black or rock wallaby).

Just so we were getting ready to leave, Dulaney brought in a small Perameles (bandicoot) with three young in pouch. It had been killed by a rat trap in the mangrove line of trees near the "port". Young weight 3 lbs lea, 4 male.

Sun. Apr. 22. Yesterday afternoon we got out at 4 p.m. sharp, taking my two boys and a local boy and his brother to show the way. We made good time and got to the savanna about after 6.30. At once went towards with one of the locals to set his 20 traps, and Alex with the other boy out with a gun to see whether they could bag up something before dark. I went out myself to locate the trails for tracking after dark.

The little house was boarding but a bark platform with a palm-leaf roof over it. It was placed at the junction of a savanna with a narrow strip of forest, flooded when separated the house from Dulaney's garden, for the two local lads with us were Dulaney's children. We found a very few and poorly-kept edges of wallaby, but nothing to indicate that they are common there. No sign of any other kind of mammals. At 7.30 I went with my light over miles of savanna trails, and the only eyes I saw were those of two nightjars and a Podomis bat which flew over and was gone. Got back at 10.30 very tired from continually slipping about in the muddy water covered tracks.

This morning took another walk around and then came back to breakfast. There found that Dulaney had caught two Melomys and two Rattus. Another canoe has come in and brings news that the tribes left yesterday for Port Moresby. Spent Saturday talking with Dulaney two nights ago (A. and Paul are in the "Northern" out at the Gulf of Papua), and Dulaney was complaining about the police to Moresby to get some special arrangements fixed up.

A spotted cuscus (Phalanger maculatus), female (pale basically the female has not the spotted pattern), has just been brought in from across the River Aboura and about 5 miles away. It has been killed by dogs but seems to be otherwise in good condition. It is said to have had one young one with which escaped.

About eleven I was aroused to watch a procession coming towards me across the savanna: the bearer carrying [illegible] with an air of [illegible] the last was the [illegible] bag, carrying a pole from which was hung a cuscus, the natives and the [illegible] boy carrying the baggage. They were a little over-jaded to learn that cuscuses had arrived an hour earlier.

This afternoon another female cuscus was brought to us. And along about 5 odd a third, very large male. (See [illegible])

Later, or rather during supper, we heard a [illegible] disturbance by getting out of the hall of newly-skinned wallaby which was heavily loaded with strychnine. We decided to give him a bath in warm water specific to dogs. We at length got about two bottles of the stuff into him, but it took two boys to hold him, while three operated and held his mouth and I poured the dose down. Dress unfortunately

got two punctures and some bruises on his hands during the process, which we washed thoroughly in strong lysol solution afterwards.

Thur. Apr. 23. This morning Blue is still feeling pretty sick, but that may be from the salt and water which he had to swallow. He is of course absolutely empty too, but no doubt a meal now will brace him up considerably.

Two Melomys and two Rattus in traps; also a little boy brought us a Pipistrellus bat. The boys are skinning the large wallaby brought in last night.

In the afternoon took the trail east of the hill which Brass has described as leading out by the nearest way to the savannas. Found them well developed tree-savannas. Birds by no means plentiful. Tracks of wallaby rarely and of bandicoot quite a lot in soft spots on the trail.

Got back at 4.45 in time to listen for Daru. Archbold came through by voice which was barely understandable through the noise of the power generator which he was using. I got only part of what he said, among which were: the Veriveri can get to us at the earliest on the 25th, that the plane is due back tomorrow (24th), that everything, including radio, got very wet when he and Rand went out to the reef.

Found that Bahliss had been true to his promise of the morning and had brought in two of the little "scrub wallabies", little blackish things that live in woods instead of savannas.

I don't remember whether I have noted that "scrub" in the Australian sense means forest, and "bush" means tree-savanna.

Fri. Apr. 24. This morning only one rate, a Melomys. Relying on Archbold's statement that the "Veriveri" could not possibly come before the 25th, I had another bunch of traps set a couple of miles out from here in the tree savanna.

In the afternoon two specimens, male and female of Zaglossus, the spiny anteater or egg-laying porcupine were brought to me. Skinning them took up the rest of the boys' time for most of the p.m.. Traps were rebait d however. About 5 ock. we heard the engine of the "Veriveri", a day ahead of the time given last night by A chbold. Tonight's radio (by voice of Archbold) was virtually unintelligible on account of the noise sent out by his generator. Morse in my opinion is absolutely "de rigueur" with that set-up.

Sat. Apr. 25. Brass and I had packed up most of our specimens the eveing before, and when the boys had brought back the traps we soon finished matters that yet remained to be completed. I called a pay parade among the villagers who had brought me specimens from time to time, and they were paid off with shillings or sticks of tobacco as seemed appropriate for the services rendered. Then the boys carried everything down to the Port and out by boat to the "veri veri". We had hardly become established before rain began; and worse still the native engineer had to take out all the spar plugs and clean them before he could start the engine. Meanwhile the rain fell in sheets before a strong southeast wind and every seam in the deck poured water in upon us. We atlength opened a tent-fly belonging to the expedition and covered the entire upper works. Not until after eleven oclock did the ancient vessel get under way, and once outside we hauled up sails and tacked steadily against the gusty breeze. Along in the afternoon the showers moderated and towrd evening we sailed under a fairly clear sky. And at seven oclock the engine stopped: we had run out of gas. Brass and I damned somebody's carelessness in sending out a boat for us which had only a single case of "benzene" aboard. Meanwhile we had just sighted the treetops of daru above the horizon. During the night we tacked steadily against a light but unintermittent east breeze. Showers fell at intervals and everything got pretty wet. And down was very unconfortable with eleven of our own boys and a crew of four other Papuans, so Brass and I stayed on deck with a blanket apiece

got two punctures and some bruises on the heads during the process, which we washed thoroughly in strong Lysol solution afterwards.

Thur. Apr. 20. This morning Bluebird still leaking pretty bad, but that may be from the salt and water which we had to swallow. It is of course absolutely empty too, but no doubt a meal now will break him up considerably.

Two galleys and two Rafts in there, also a little boy brought us a Flashlight bat. The boys are skinning the Giraffe finally brought in last night.

In the afternoon took the trail north, the hill which Brass has described as leading out by the nearest way to the savanna. Found them well developed tree-savanna. Birds by no means plentiful. Tracks of wallaby rarely one of bandicoot quite a lot in soft spots on the trail.

Got back at 4.45 in time to listen for Jack. Ardbolt came through by voice which was barely understandable through the noise of the power generator which he was using. I got only part of what he said, among which were: the Squivers can get to us at the earliest on the 26th; that the plane is due back tomorrow (26th), that everything, including radio, got very wet when he and Jack went out to the reef.

Found that Bailiss had been true to his promise of the morning and had brought in two of the little "scrub wallabies", slight blackish things that live in scrub instead of savanna.

I don't remember whether I have noted that "scrub" in the Australian sense means forest, and "bush" means tree-savanna.

Fri. Apr. 21. This morning only one raft, a galley. Relying on Ardbolt's statement that the "Swiftwind" could not possibly come before the 25th, I had another bunch of traps set on a coolabah out from here in the tree savanna.

In the afternoon two specimens, male and female of Rufogrey, the spiny anteater or egg-laying porcupine were brought to me. Skinning them took up the rest of the boys' time for most of the p.m.. These were rebait'd however. About 5 o'clock we heard the engine of the "Swiftwind", a day ahead of the time given last night by Ardbolt. The gale radio (by voice of Ardbolt) was virtually unintelligible on account of the noise kept out by the generator. Hence in my opinion is absolutely "no urgency" with their set-up.

Sat. Apr. 22. Brass and I had spoken to most of our specimens the evening before, and when the boys had brought in the traps we soon finished matters that remained to be completed. I called a day parade among the villagers who had brought us specimens from time to time, and they were paid off with mirrors or axes or tobacco as seemed appropriate for the services rendered. Then the boys carried everything down to the Fort and out by boat to the "Swiftwind".

We had barely become established before rain began, and more still the native carriers had to take out all the specimens and clean them before he could start the engine. Meanwhile the rain fell in sheets before a strong southeast wind and every seam in the deck poured water in upon us. We straggled opened a tentfly belonging to the expedition and covered the entire upper works. Not until after eleven o'clock did the anchor at last get under way, and once outside we hoisted the sails and worked steadily against the gusty breeze. Along in the afternoon the showers moderated and towards evening we sailed under a fairly clear sky. And at seven o'clock the engine stopped: we had run out of gas. Brass and I damned somebody's carelessness in sending out a boat for us which had only a single can of "benzene" aboard. Meanwhile we had just sighted the treetops of Lara above the horizon. During the night we tacked steadily against a light but unfavorable breeze. Showers fell at intervals and everything got pretty wet. Also we were very uncomfortable with eleven of our boys and a crew of four other people, so Brass and I stayed on deck with a blanket apiece.

In the morning we found that by tacking all night we had only gained about one mile. However after coffee we felt better and as the day cleared up and the wind pulled over a trifle more south we made fairly good speed until just off the island. There we found the tide against us, and had to make three or four more long tacks to get up to the pier which we reached about eleven oclock, having taken just on 24 hours to do what we ought to have accomplished in eight at the most.

At Daru things were about the same. A garden had been made, drains finished about the house, and the plane with Rogers and Julstedt was away in Port. Rand and Archbold reported a more or less fruitless trip out to the reef, but at least they saw it. But the most important thing to me was that I found a lot of mail waiting.

The "Maira" (that is how it is spelt, it seems) is due about the 28th, and we all expect to get away on her before many more days have passed for Palmer Junction. Meanwhile a mail notice has come around for a boat leaving tomorrow for T. I., and this letter goes with her.

Thursday, Apr. 30. For the past couple of days have all been occupied in getting things sorted out and packed up for the trip up the Fly River on the Maera.

She was due this afternoon from Moresby, but up to now has not put in an appearance. The plane brought a new radio set back with it the other day which seems to work well - at least we are able to work Port Moresby with it. It is run on the old generator, and now the generator itself is beginning to act up a bit. But I suppose Rogers will overhaul it and get it in good shape to be taken up-river.

The night before last we were all (in fact all of Daru) bedden to a party at Dr. Vernon's. The Doc. is going away on a trip to the Bamu River shortly in the "Veriveri", and invited everybody as a farewell gesture. Last night we had him to supper with us. Tonight we all go up for the evening to the Champions' place, and tomorrow I am going out to Leydens' for supper and (I suppose) bridge.

My boys have now reached the stage where they not only set traps and catch specimens and skin them as far as the "making up" stage, but in the last two days I have started lessons in the final making up of skins. Two of them have taken hold very quickly and I have good hopes for the other two.

Spent a good part of today getting a tracing of Champion's map which he prepared from data gathered during his flights with us. That is ~~Claud~~ Ivan Champion. Ivan's brother Claude and his wife are the couple whom we visit this evening. By this time Ivan Champion with his companion Adamson must be well up the Bamu on the "Vailala" by which they traveled from here, and ready to transfer to canoes. Woodward the Resident Magistrate of Daru is with them but returns here on the Vailala.

Thursday, Oct. 30. For the past couple of days have all been occupied in getting things sorted out and ready for the trip up the Ely River on the Mesra.

We was due this afternoon from Moresby, but up to now as not put in an appearance. The plane brought a new radio set which it the other day which seems to work well - at least we are able to work Port Moresby with it. It is run on the old generator, and now the generator has to be beginning to act up a bit. But I suppose Rogers will overhaul it and get it in good shape to be taken up-river.

The night before last we were all (Mr Ia & all of Mru) beaten to a pulp at Mr. Vernon's. He was going away on a trip to the Ram River shortly to the "Ivanhoe", and invited everybody as a farewell gesture. Last night we had his to supper with us. Tonight we all go up for the evening to the Chapmans' place and tomorrow I am going on to "Palms" for supper and (I suppose) bridge.

My boys have now reached the stage where they not only say "Good morrow" and salute me as I go by, but "waitup up" stage, but in the last two days I have detected I among in the first waiting on of kaiaa. Two of them have taken quite very quickly and I have good hopes for the other two.

Yesterday - good news of to-day getting a training of Chapman's map which he prepared from data gathered during his flight over the Ely. That is Kiaw Ivan Champion, Ivan's brother and his wife are the couple whom we visit this evening. By date time Ivan Champion with his companion Adamson must be well up the Ram on the "Vahlia" by which they travelled from here, and ready to transfer to canoes. Woodward the Resident Magistrate of Daru is with them but returns here on the Vahlia.

Thursday, Apr. 30. For the past couple of days have all been occupied in getting things sorted out and packed up for the trip up the Fly River on the Maera.

She was due this afternoon from Moresby, but up to now has not put in an appearance. The plane brought a new radio set back with it the other day which seems to work well - at least we are able to work Port Moresby with it. It is run on the old generator, and now the generator its if is beginning to act up a bit. But I suppose Rogers will overhaul it and get it in good shape to be taken up-river.

The night before last we were all (in fact all of Daru) bedden to a party at Dr. Vernon's. The Doc. is going away on a trip to the Bamu River shortly in the "Veriveri", and invited everybody as a farewell gesture. Last night we had him to supper with us. Tonight we all go up for the evening to the Champions' place, and tomorrow I am going out to Heydens' for supper and (I suppose) bridge.

My boys have now reached the stage where they not only set traps and catch specimens and skin them as far as the "making up" stage, but in the last two days I have started lessons in the final making up of skins. Two of them have taken hold very quickly and I have good hopes for the other two.

Spent a good part of today getting a tracing of Champion's map which he prepared from data gathered during his flights with us. That is ~~Xxxx~~ Ivan Champion. Ivan's brother/and his wife are the couple whom we visit this evening. By this time Ivan Champion with his companion Adamson must be well up the Bamu on the "Vailala" by which they traveled from here, and ready to transfer to canoes. Woodward the Resident Magistrate of Daru is with them but returns here on the Vailala.

This is all that was typed of letter # 15.

Visual signals from land party to ship are to be in three foot squares, red, yellow and white calico, the signals to be twenty feet over all.

All's well

RED RED.

Trouble. All being forced back to river landing

RED. YELLOW

WHITE.

Sick man to be sent out as soon as possible

RED YELLOW WHITE.

Need dysentery medicine

YELLOW

RED WHITE.

YELLOW

Willis will be at river landing

RED WHITE RED.

Willis will not be at river landing

RED YELLOW RED

Will not need food

RED RED.

WHITE WHITE.

L. 16. p. 1.

Fly River trip –
Sunday May 3rd

I have left my typewriter in Daru after all. Weight is such an all important matter that it seemed better to do so. Yesterday afternoon Brass + I went the rounds of the place saying good-bye to everybody. The boat was loaded + the boys had been put on board by 3, but we didn't get out to her until around 4.30 + even then Rogers + Dalstedt stopped for a "wee dock in doric" (if I've spelled that right?) ~~All~~ Most of the day today we have been at the mouth of the river where we anchored last night to get a pilot from Katatoi. This morning shortly after up-anchor the oil-feed of the engine went out of order & it with one or two other minor up-ains ~~to~~ lost us about 4 hours. The result is that we are now only about level with the upper ends of the large islands, and "now" is 6 o'clock. We had hoped to find a spot suitable for putting some of our boys ashore to sleep, but so far nothing very good has appeared. Last night everybody slept on board, of course.

There are just three whites here, Brass + I, & the Captain-engineer Nicholson. He has certainly had to work today! I got in touch with Daru this afternoon at 15 and they are making the first of two projected flights tomorrow morning, and will stop by to give us a chart which I requested. Static was very bad + I had to ask for ew. By the bye our new set built at Moresby has a frequency of about 7000 kc, Tell Bliss, and we have schedules at 4.30 pm and 6.45 a.m., Papuan time. I have just been training a "radio boy" to start + stop the motor generator. Have also been attending two of the men who have ulcers.

Besides our own boys we have 6 police including

KING BOOK BOND
ZOLEB

a sergeant (Healy's crew) and the crew of the "Maria" making (either the crew whose number I dont know) 65 in all. L16.p.7

The lower part of the Fly is like a great inland sea with huge low islands scattered thro it, its shores fringed with endless rows of mangrove trees and Nipa palms.

Last night I had my cot spread on top of the cabin but the wind was fresh even at anchor and I nearly lost the small tarpaulin which I had spread over me as a precaution against sudden little gusts of wind trying to take it away with them.

It was not until half past seven or eight that we came to a village named Auti on the northern end of Kiriwai island.

Had anchored in ~~[illegible]~~ water that saw like a mill race with the falling of the tide. A number of canoes came out to us astant across the rushing current, their crews paddling for all they were worth. In the light of a fairly good moon we purchased some provisions - sweet potatoes, eggs &c. And sent off a number of our boys to pass the night ashore as guests of the village. Such a plan gave all opportunities to stretch out. Apparently Auti is a well organized village with a police constable of its own. Our own police sergeant is to sleep ashore. And all will be recalled in the morning by the firing of a gun.

Monday, May 4. We had heavy rain during night + a very murky morning. Didnt get boys onboard & under way till about 7.15. I got through to Daru OK - 2 messages each way: got in touch Moresby at 8.15 + made daily schedule. Touched a sand bar but got off easily on rising tide.

At 10 o'clock we visited Madiri where we went ashore to visit Mrs Crowling, a lady with kindly disposition and

BIKE BOOK BOMB

at the same time great strength of character is in charge of the big rubber & coconut plantations. She has as assistants two young men Drysdale and Gordon. There is also a mission station at Madiri & we met two women who teach there, Misses Harris & Smith. The latter was teaching school – the youngsters all squatting on leaf mats doing sums from the blackboard. Mrs Cooley gave us tea & bread & cheese & then took us out to show us around. The whole plantation is frightfully wet & muddy but she slushed through it all determinedly. She hails from north Yorkshire, England & talks with a broad accent. Got away from Madiri about noon. Drysdale & Gordon came on board for a "spot" before we left. The latter is a newcomer but I found that he has seen quite a lot of South America.

Passed a big house on south bank don't know. People all dressed up in red sarris but we didn't stop. River lined with fresh water mangrove or "firefly trees". About 6 o'clock we stuck on a mud bank and were still on at 8, waiting for the rush of the rising tide to float us.

At 9 p.m. the tide came abruptly, and at 9.10 a swirling torrent swept us off the bank and up-stream. So nearly full moon gave us ample light to travel by. Nicholson stayed up on deck until 3 a.m. by which time we had passed the narrow part of the river where the bore is likely to occur & then we came to anchor below the Deriker park opposite Stuart Id.

Tuesday May 5. This morning word for Dave that the plane was starting out (had left at 6.30) & would see us soon. So we stayed anchored thinking she would come to us. Apparently she headed directly for the entrance as at 9 she hadn't come, though I had heard J.

talking to him. So at 9 we up-anchored & away.

11 a.m. Running among the Fairfax islands, shores of both main river & of islands rather low but carrying heavy forest. Saw one abandoned shelter. Our boys spotting their new shirts & all keep the paper labels on them. Just ran aground once more - got off - stuck again at 11.30 for 20 minutes. We have gone back a way & go up the left bank on the other side of one of the Fairfax islands. One shirt blown overboard - Occasional high clay (or sandstone?) banks serve to hold the river in place. (1 pm.), or at least the left bank. 2.30 to 3 got stuck again & had to send dingy out with sounding lead to find channel.

3 pm. In narrow channels 300 ft wide in Fairfax group - Vegetation heavy - betel nut palms plentiful. Heavy showers all last hour. Chilly far from region here. 3.05 clear of Fairfax group. Passed a relative Island.

4.10 passed clearing with 2 or 3 houses, 2 men in 2 canoes came out but we didn't stop. 8 pm. Our travel troubles seem over for the time. We passed alligator island at 6 & have been travelling in 6 or 8 fathoms ever since. We are above tide limit apparently. Moon full tomorrow night.

8.45 pm. Passed the flares of a substantial village on the right bank of the river (our left).

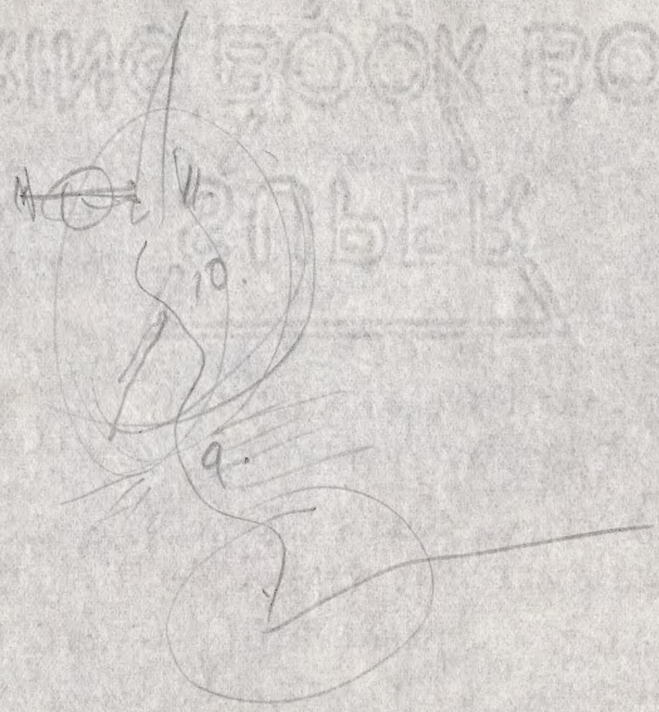
Wed. May 6. Drove on all thru the night. Lights of 2 small settlements seen. I looked out at 3 a.m. to find fine sunrise edging river & right bank but still forest on left bank. Morning drizzly or misty but soon cleared up. Pick winding between grassy areas that jumped in places by forest. At noon got where Roerill Junction is.

Trouble with radio generator this morning. Also noise in receiver. Uncertain as to position - whether passed Stickland or no. Current more rapid - with occasional breakers. Width river ¼ mile. Days fringed with thin forest & occasional grass. Radio generator giving trouble. Apparently affected by the rain.

1 pm. Stopped to get a little fire wood. Wood 1 pm quickly but the last we could find. Boys got a few plants, & a rare dragonfly & the boys shot 3 crowned pigeons.

2 pm. Passing thru immense tracts of the genus Saccharum, scanty small trees.

Until sundown the same general scenery - a wide river dividing swaying contortions thru low reedy country with


10.
9.

occasional small lagoons set off to one side or the other. Brass has fever tonight — the first of any body of the expedition.

8.35 We passed Everell Junction, plainly seeing the mouth of the Strickland River, so we are by no means as far along as we thought we were. The tongue of land between the rivers is grass covered & quite without trees but the other banks are thickly fringed with forest. Came to anchor at 1 a.m.

Thursday May 7. Up anchor 5.30 a.m. Weather slightly overcast. A few mosquitos during night. Brass better but pretty well washed out.

Still in vast grassy areas interspersed with forested patches. Some coconut palms seen close to river edge, the nuts rather small.

9.10 A lagoon and rising ground (possibly with 2nd growth grass) forming small hills 40 feet high near left bank of river. Lines of very low ridges ten miles west of us all morning. To the east ground seems to rise to 40 or 50 feet, forested — probably the divide between Sly R & Lake Murray.

10 a.m. Just emerged from slightly ridgy area having found on ridges after running huge bend. E - N - W + S again thence west & bearing away NW, into area of minor grass swamps with little or no forest clumps to north of us. Long ridge at west terminates at its northern end by the river.

A while ago the police sergeant fired at some whistling ducks. Quantities of duck, black & white ibis, & white herons flew up from the swamps. Saw a bird, possibly white breasted cormorant, with Anhinga-like flight. Eagle. Marsh hawk. No crocs. No mammals. Day partly cloudy. Plane making another exploration flight to Mt (see J.'s telegram).

11.00 a.m. Heading due N. Largest lagoon yet seen on west of us — nearly 3 miles wide, separated from river by thin fringe grass. Across lagoon very low hills & a village on at least 3 knolls near edge. No canoes seen.

1.30 p.m. Still same type country suggestive of 2 small hillocks 2 miles east and slightly larger one prominent ridge 4 miles N.W. Course at present N.E. — a bright starlit. Brass over his fever but very cold.

2 p.m. End of NE reach. Turn N. slight hills in remote distance either side. 3.05 Course now due S. Brass

KING BOOK BOND

thinks some Eucalypt savanna on left bank (can see it). Due to land to W again shortly.

5 pm. Talked Tulstedt. Plane again trouble yet sight of Mt Jaim. Trying again tomw, & if successful will put Rand Willis & Healy on board Maira. Same general type country as before, but plenty evidence that river now very high, as large burned patches of grass & reeds are not flooded. Came to anchor at 7.20. Put up big tarpaulin over roof of cabin. Heavy showers between 9 and 10 o'clock.

Friday - May 8. Started at 5.15 a.m. but had to anchor again because something went wrong with the governor of the ship's engine. We may be there for 3 hours. Dave says that plane will not start out today because this morning one tire was found flat. Shape of river much as yesterday but a little more forest & less reeds. Putting some boys ashore to cut wood, & a couple of bird boys to see what they can shoot. A large lagoon seen from mast head on right bank & a little down stream.

Several parties went ashore including Brass & I. "Shore" consists of a narrow raised strip of ground of 1 or 2 above river level, with forest growing on it, which dips down behind to swamps overgrown with long grass & pandanus. Pass for some plants & brought me a couple of weevils. I scanned about some but naturally saw no mammals. The bird boys shot some grey ducks (of three sizes).

11.30 a.m. Still here. The governor is badly shot & the race carrying the bearings for the timing gear is also pretty worn. It looks like trouble ahead for the boat.

5 p.m. Here all day & sleeping all night. Boys camping ashore except personal boys. Have put down 4 dozen traps. 2 Phalangers ~~maculatus~~ shot, also few birds.

Sat May 9. Got away a little before 9. Engine a bit rough at first but settles off well. Traps caught three Phalangers of a species new to collection. Arboreal (from the hind foot) though caught on the ground at the bases of trees. The females with characteristic marsupial of the genus.

9 a.m. A fairly well developed ridge to west, apparently running W. & S. Plane again flying & may visit us.

9.30 a.m. Just cut back to Wally past of above ridge.

10.15 Plane arrived & brought us Willis Rand & Healy. Ryan & Tulstedt looked over radio. Plane left few minutes after 2.

LINE BOOK BOND
ZOLER

here comes report Mt Fain, flat topped, with few small ponds. Wide of Tella about a mile. Land finds country just beyond our present position a mosaic of forest & swamp areas. This morning Brass saw a good sized stream enter from left bank of river. We stayed at anchor until plane left. Shortly after having saw another red cut bank (clay?) on our port side.

5.15 p.m. making good head way. More forest; less grass swamp. Forest taller too, & cuts off view from mast head. Weather hot & sunny, though we had showers at noon. Wild bees & fruit trees still with us. They have been abundant all way up. Sky above tidal area. Anchored at about 6.30.

Sunday May 10. Weather somewhat overcast. Nicholson found more trouble with the engine which will take some hours to remedy. Several snow-white May-flies skimming along surface of water just after dawn.

Sick parade seems high — some 20 boys with colds or fever. Departed at 8.20 (this time it was the oil feed out of order).

8.45 passed good sized village on slope of small hill 50 ft high. About 10 houses & probably 50 or 100 people. On right bank of river (our left). Hill about 100 feet on right bank, all forested (9.10).

10.45 Large village, apparently the location of the Dutch mission as 2 people in white wearing helmets seen. Village on high red bank, rocks below soil level look as though sandstone. The white-clad people are said to be Malay missionaries of Dutch Reformed. (We reached the Dutch Indies yesterday morning early).

12.20 A third village, largest yet seen, with at least 16 houses & apparently more Malay missionaries. One house with fences. Village on bank about 6 feet above river. Men wearing shells.

1.20 Abandoned village site (coconuts & bamboo) on left bank, & behind it a lagoon (or possibly a loop of the river).

4.10 Coconuts & canoe landing on left bank. (5 men seen 15 minutes earlier on right bank) 5.40 Large creek on left bank.

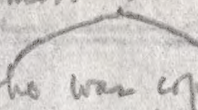
5.55 anchored. Afternoon fair & hot.

May 11. Monday. Up-anchor & away at 6.44. 8.05 old camp on left bank. River nearly in front, fringe of swamp. Road says however that few places bits of swamp to be seen at hind bank fringe.

8.45 Bottom rather on rocks. A shelter, new but empty on right bank.

9.28 Large creek right bank.

KIMS BOOK BOND
ZIBEK

9.55 Large village on right bank on high red bank 25 feet high. About 7 large houses most without floors, one very large house perhaps 50 feet long. Roofs  shape. About 40 people, smoky brown except one who was coppery. Headdresses like hoods. 2 dogs – 1 brown, 1 black & tan. Some people with white paint. Men wore white shells, two of them large. Six canoes on water, canoes with long pointed ends overhanging water like those at Lake Murray.

10.38 A new shelter on right bank. No people seen.

12.50. Passed two canoes (6 men) which had been pulled in among the reeds to give us plenty of room. 1.30 Lots of drift wood coming down river. 2 Creeks about 30 yds across enter at right bank.

1.50. Passed two tiny islands close to left bank of river. Saw yn cane (Calamus), actually a trailing palm very plentiful all along the river now.

2.45 Large creek (or cut off) with fairly strong current from left bank of Fly (about 60 yards wide)

3.10 Passed number of trees on which quantities of flying foxes (Pteropus) were hanging occasionally flapping their wings in the sunlight.

3.12 Stuff of stream (cut-off) mentioned at 2.45. Flying foxes are therefore roosting on large island.

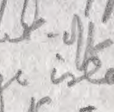
3.35 Strong 3 mile current at sharp left hand (down) bend of river, + overflow creek ahead of it

5 pm. Trying a "cut-off" on the say so of a boy, which most of us think a pretty crazy idea. However it may be OK. We'll see. Hah Dare on ~~in~~ die just now. 5.20 Came out into Fly successfully.

5.55 Very sharp bend – river doubles around its left bank.

6-6.15 Several very large fruit bats seen flying over the river.

Anchored about 6.30.

Tuesday, May 12. Away at 6.15. Soon passed large house built on tops of poles so solid that they may have been trees with their tops lopped off. House thus:  Could see no ladders. Opposite it a canoe with 5 men and another on the same side of river with 3 men. They tried for a few minutes to keep up with us. The one was wobbling all over the place in our wash. A minute later a tribe they just above a high red bank which turned the course of the river left, came in, and a small island was passed. Rain at night.

7.45 am Passed mouth of Alice R., about 100 yards wide. Water browner than that of the Fly R.

8.20 Passed a second tree house, this time on left bank.

9.10 High red bank on left bank of river is the end of a large ridge 100 feet high which comes from NE and is bitten again by river (course E) Behind rocks apparently red & grey sandstones. Some scaling off which they show they appear to be soft. Creek 30 yds wide drains eastern side of ridge. Fly now coming from S.E.

9.20. Creek from left side of Sly. (course ESE)

Things are pretty well settled onboard now. Of necessity we are very crowded however. The tiny cabin is aft, about 9 wide by 7 long, a bunk along either side, a table in the middle & a large amount of gear all about the floor. In addition my radio is inside the cabin. Nicholson & Brass sleep in the two bunks and I have a cot outside against the stern well protected from the weather by tarpaulins and drier than the cabin. Up above, on the cabin roof Rand, Willis & Healy sleep. A big tarpaulin has been stretched over the main boom to make a shelter over them, the boom having been raised 5 feet up the mast. Meals are cooked by our cook forward in fire places made by cutting open 40-gallon steel kerosene drums and are served in the cabin. Most of our fare comes out of cans except onions & potatoes which we carry dry in crates. The day begins with coffee & the boys putting away the cots & bedding. Then comes radio contact with Dave, breakfast & radio with Pat Moseley. Afterwards while the boys clean up & do the days laundry we sit around & discuss plans, and observe and make notes. ~~Lunch~~ Tea comes along at about 11 and lunch at 12.30. Afternoon tea at 4 & radio with Dave at 4.30. Before evening a general clean up is in order. Then we gather before supper to take a small drink & at 5.55 get time signals from California. With dinner finished we sit about & chat while the boys are getting beds & baths ready. No bathing consist of river water in a bucket slightly warmed by addition of warm water from the cooling system of the engine. And you pour it over yourself with a cup. It's good even though primitive. As I write this I see Willis dozing with one foot on the table, Nicholson glancing through an engineering magazine, Healy reading the Saturday Evening Post & Brass writing notes. Rand is up "top-side" somewhere. Brass & I tried to fill some interviews of the cabin. Besides all the above, the two dogs Blue and Stink occupy the last few inches of space on the cabin floor. Such, more or less, is a day on board the ship "Maira".

10.5 am Another small creek from S.E (our course E).

10.40 Another well marked ridge from NE turns river, but no cut banks showing - heavy forest.

11.30 Half dozen men on left bank of Sly. No house.

12.00 Crocodile on snag

12.03 House and small garden. No people seen. House on ground.

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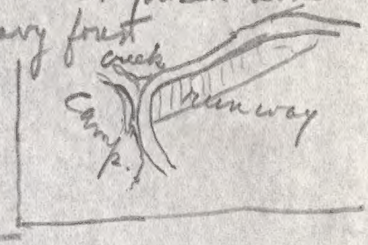
12.30 Reached the old Orville camp which was headquarters 6 months ago for a gold prospecting company. It is on a 50 foot bank on the right shore of the river and their airfield was opposite. The houses were well built native type & the place would make a wonderfully good collecting station. In 6 months vines and large convolvulus and grass have almost smothered the place. The settlement comprised about 15 houses of various sorts & was carved out of heavy forest



1.50 Left Orville camp.

2.50 3 men & a whitish dog seen in forest edging left bank. A Ridge, forested on same side.

3.15 A large orchid with several white flowers hanging from dead limb above water.

5.08 Passed large creek (Eleanor?) from left bank of Sly.

5.45 Another large creek (neither this nor previous one the Eleanor however) from left bank.

6.30 Anchored.

Wednesday, May 13. Anchor up at 6.15 am. A high cut bank indicates the end of a ridge (6.30) on left shore. River about 150 yards wide.

7.15 River changes course any how rivers; we came up it northwards, then turned sharply east. Same reddish clayey rocks with indications of banding down near water level. River seems to be falling slightly.

7.15-7.30 Passing large forested island which lies closer to left bank of river. This is probably Macrosson Island in which case the larger of the two streams observed yesterday afternoon (at 5.08) was the Eleanor. A good deal of D'Albertis creeper (scarlet flowers). Passed two trees with fruit bats (Pteropus) hanging all over them.

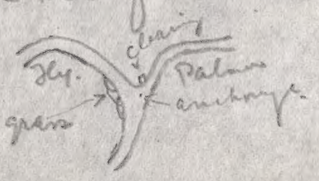
8.05 Six or eight big fruit bats flying steadily northwards: these animals appear to be semi-domiciled at least.

8.40. Ground becoming quite hilly: hills 150 feet high. Ran on sand bar just north but got off easily.

9.35 For last 15 minutes (8.20) have been running up the long E-W stretch at whose eastern end we expect to establish our base. A creek entering left bank of Sly (a canoe tied up there).

10.50 For the last hour & a quarter have been driving up against strong current and several sharp turns in the river where we had hard work to make headway against the whirling current. We plan to go on to Palmer Junction just to check our position and then drift back to the best selected as camp site from the aeroplane.

11.15 Reached Junction (Palmer).



11.50 Rand + Nicholson with four boys took the dingby + rowed up the Palmer, the idea being to prove definitely

whether we are anchored at the true junction or just below an island (perhaps Macrozon). Stingless bees beginning to invade us as we lie at anchor – little black fellows. Weather: quite a lot of rain during night, clearing towards morning. Fair all morning.

1.45 Boat returned satisfied that this is indeed Palmer Junction.

2.30 Getting ready to run down-stream to the east end of the long E-W reach (passed at 8.40).

2.30 About 8 men seen across the Fly at the spot on my sketch (p 11) marked "grass".

3 pm. We have just run downstream again and tied up to the left bank of the Fly at 528 miles as surveyed by McGregor. This spot is readily accessible for the plane and by cutting back from the river for 50 yards we reached the top of a small hill where the boys went to work on a clearing. We also found marks on the trees indicating that a police camp had previously been made there (we believe it to be Karius's & Champion's camp). The entire shore is under very heavy forest of the foothills-rain-forest type. Brass found a dump. I sent a long message to Dad and sent my boys ashore to set out traps.

Thursday. May 14. Heavy rain during night. Small bat seen at dawn skimming over water surface. Stingless bees on job by 6.15. Clearing getting enlarged quickly but we shall probably not get ashore today. Took my four boys out with traps. The places look pretty good too. Nothing in the traps the boys put out last night, but saw about half of the "sets" and they are not very well placed. The old Karius-Champion trail is being reopened. Set traps along as much of it as was finished which is about 3½ mile. Weather very hot. Clear. At noon found that we were being visited by about a dozen men of a local village across the river. A couple were bearded. The general dress was a string around the waist and a mat. A string bag or net bag was carried slung from the shoulder by most of the men. Bows & arrows and native pipes were traded for beads and empty cans and bottles. Numerous photographs were taken. The noses of these people are pierced through each side above the nostril, one or two however had only the median septum perforated. A small dog had been left across the river and after howling without stopping for nearly an hour it at length swam across the 150 yards swift-flowing stream, and swam very strongly too.

In the afternoon set out a lot more traps. Got a giant millipede and Healy found a short, chunky, apparently non-poisonous snake.

The ground back from the river is strongly ridgy, the ridges steep & with narrow crests, the bottoms with muddy streams flowing or sluggish in V valleys. The whole is forested. The soil appears clayey with occasional rounded (some angular) nodules of quartz.

In the evening as the steamer's bees withdrew the "six-o'clock crickets" turned up (they go from ten minutes to six until about 6.25). I think all the boys are sleeping ashore tonight up at the new camp site.

Friday, May 15. Rain most of the night. Disappointed to get not a single mammal in traps. Hope for better results later however.

A fairly busy day. Reset the first lot of traps altogether and retacked main line. We managed to induce 20 or 30 of the local inhabitants to carry our cargo up the slippery track to the camp site above, while our own boys were building the store, cutting posts & thatch, &c. Got some photos of these men unloading the boat. As I write (6 pm) they have been paid off (a razor blade & a few beads each) and are being ferried across to their own side of the river. One put his hand to his ear & pointed across the water meaning that he would sleep on the other side. A message from Archbold came to say that the plane will be in Monday to discuss further plans. The river is falling a bit, but most of the ship is unloaded, so she can pull out into mid stream any time. A host of white winged May flies skating over the surface this evening. Storm due this evening. By 6.15 all the May flies had finished their brief span of winged life and floated either dead or dying in the water. In fact I believe that many must have sunk.

Saturday, May 16

A very busy day. Today we transferred from the shipping to our camp ashore. Though the mass of material had been taken up to the newly built store yesterday a lot of matters had still to be done today.

We have now, besides the store of tent (Bros + I) with adjoining fly (Radio + Lunch room), another fly (Rest + Pubs), a fly roofed washroom, a lean-to (Brass plant - drying room), a Cook-house, Healy & Willis's tent, Mule fly, 2 lean-tos for shelter of boys, a leaky lower which we use as a washroom.

Thus time there was no trouble - 2 pieces of Malamyn were in a shade better than the complete blank of the day before. In the afternoon set out a brace of steel traps baited with meat.

We could not start the radio motor so could not go to Jubstell though I could hear him calling with voice & morse. Had the set all up by noon. Got Sen Francisco time signals very strong. Blanco has now taken over cook-house, so I now have just mainsail & sails to look after.

It's very pleasant to be ashore & to have room to expand a bit, though I could wish mainsail were rather more abundant. Caught some large beetles last night at the light.

Sunday, May 17. Willis & I (he knows a lot about gas engines) took down the radio motor this morning & cleaned out the carburettor. Got her started at last only to find that we were not getting out any speed & found a tank gone foul, so now with new tube in place hope to communicate with Dare this afternoon.

Sent all force of my boys out shooting until 3 o'clock when they go to bed. Tripp & I walked out along the trail for a mile or so as far as the head of the Sly R to N.W. Just on the corner there is an old native garden. The way in is very very bad & several deeply wooded creeks empty into the Sly. The whole country has undergone very total growth. Shot some birds about our clearing just at daybreak.

This ends letter #16.

KING BOOK BOND

Monday, May 18. At the Camp "5 miles below Palmer Junction". The plane is due this morning. We had a lot of trouble starting the radio motor and when at length we did from the air Tulsted said he could not hear us.

Last night tried Bertsch's insect funnel trap — a large funnel with a very strong cyanide jar open-mouthed at the bottom of it, the whole contraption hung beneath a strong light. Caught oodles of small things and a sprinkling of larger ones.

The plane came in early — about 9 o'clock, bringing visitors Mr. Woodward, resident magistrate of the Western Division. Russell fixed up our motor-generator — at least he said it was all right. They all stayed to lunch + left about 2.15 o'clock. A little collapsible boat was used to come ashore + go on board, and afterwards it was left here.

Just showed the locals some specimens of mammals & told them to bring them in. Their word for rat appears to be Tutiri, and for Cuscus Sinai. They called a bat Maime.

Just as as the "Rono" was getting off the water the two dogs Blue and Stink got so wildly excited that they started their third fight and fell into the river whence they were dragged half drowned.

On both banks groups of local bushmen were gathered together to watch the evolutions of the plane.

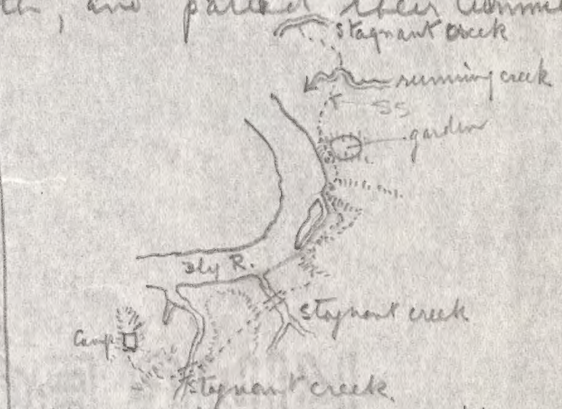
In the evening we had a little send-off party for Healy and Willis who leave in the morning.

Tuesday, May 19. Some rain in night. About 30 locals assembled to help carry loads along the trail. Got through easily to Dare: very strong signals both ways. Reduced radio schedules to one a day — at 7.30 a.m.

Loads were distributed among the carriers + a farewell cup of tea among the five of us whites. Healy + Willis moved off with about 70 men at 9.45. We took lots of pictures. Healy as Government officer with a corporal headed the line; the sergeant travelled in the middle and two police with Willis brought up the rear.

In the third time a cassowary egg has been brought in.

The second of them turned out to have been boiled. Probably its donor classed it with the green bananas which he brought as well. He unwrapped the last one tenderly from its palmleaf cover and said "Twee-twee-twee" which means not as you might imagine, the call of the baby cassowary but "beads-beads-beads". We showed them a picture of a monkey defying a large snake and being finally swallowed by it. They understood the last picture of the snake lying with a big lump half way down its length, and patted their tummies to indicate their appreciation.



approx. scale: 1 inch = 1 mile.

Took a longish walk this p.m. along the new trail. Had followed it previously as far as the garden marked on sketch. Ground everywhere ridgy + rough & under forest. The most interesting feature was the creek with water running. The country rock is there well exposed and proves to be a soft silty sandstone. Small quartz nodules blackened superficially lie loose in its bed and also some sand. I shall go back and look it over more closely. The position of this camp is about 2 miles north of lat 6° S., and about 3 miles east of 141° 30' east of Greenwich.

5.30 p.m. A very heavy shower during which a number of swifts came wheeling + diving through the air all about camp. Rand shot four.

Wednesday, May 20. Rain and plenty of it during the night. Nothing in the bat net, but found a new lizard walking along the top of it before bed time (my bed time). Nothing in traps either. Walked out along ridge running south. Saw track of Cassowary.

Back in camp found that Willis had sent some boys back with a note to get more supplies. They reached Surprise Creek yesterday, and so I'll be able to send on a wire which I received for Healy this morning.

Set ten traps up ridge this p.m. in extra special hand-picked locations. Hope for best. Sent Alex out butterfly collecting, + other boys on sewing canvas cases for radio equipment.

5.20 p.m. About 40 of our local carriers came back with

a note from Willis in which he stated that he had paid off some carriers & given them a bag of rice & would we give them a kerosine tin to cook it in. Also that Healy was ahead in pretty rough country. Healy must be somewhere between Surprise Creek and the Black River.

Went out Jacking. Saw two bats with strongly luminous eyes - Dobsonia or Nyctimene. The fly had quietly risen from the previous two days of rain and had backed up the first creek so that the water was six inches below the hand rail. We went down to the back of the main river and took down the collapsible boat and ran back ropes through the handles of all the gasoline drums (which may possibly float).

Thursday. May 21. Late yesterday afternoon a very interesting bat was brought in - a tube-nosed bat apparently of the genus Nyctimene. The wings along the boner are curiously mottled with greenish yellow giving the appearance of the otherwise gray skin having been gnawed by roaches. The gray back is broadly striped with a longitudinal mark of blackish brown. But most interesting to me (I've never noticed it before) is the well developed claw on the second digit of the wing in addition to the usual one on the thumb.

This is a wretchedly difficult place in which to get mammals. In ten traps set by me yesterday

I not only got no specimens but only one trap was even sprung. Eight were roofed. The bait in every case had been eaten by insects. The boys caught nothing at all. The river has fallen about 2 feet.

Took another look around late in morning. Found more trap sites but none too encouraging. This seems to be one of those fruit areas with abundance of vegetable food available where birds are not too common and mammals are decidedly scarce. Sent a couple of the boys out again with butterfly nets. The other two are working on the radio cases.

Took a turn around & rebaited – this time with corned beef. A long stay here should give ample opportunity for experimenting with baits. I intend trying also salmon, fruit, honey & cheese. Some natives just brought in a few birds but no mammals.

Acia & Ravenoia did quite well, bringing about 30 butterflies of 9 species. We get excellent results with the light-formol-cyanide traps, taking a couple of cubic inches of small material each night. Throwing up a drying shed to use heat from gasoline lanterns.

May 22. Rain last night. One large melong & this a.m. One boy (of Press's) quite sick – fever, cold, possible dysentery – telegram flying to Hpro (we want him taken out.)

Note regarding Melomys: # 2254-6 and 2265 are dark-footed; # 2263 has white hind feet.

In my own trap line corned beef was a failure and in the afternoon rebaited with canned salmon. A big cassowary was shot by Ego-ego one of Rand's boys. We had some of him fried for supper. Natives came in with scrawny little bananas to sell for beads, most of them hardly worth having. Occasionally however they bring a ripe plantain or a yam.

May 23 Saturday. The plane leaves for Moresby this morning at 10 o'clock. Boy still low & rather delirious. Traps today gave nothing — the salmon n. g. as bait.

Principal trouble in this place is the lack of animals. They are simply not here to be caught.

Yesterday morning Simon, one of Willis's two boys was sent out. He did not want to go on. From a note which Healy sent by him the trail head must be some 8 miles this side of the Black River.

A rare find made by Goroo who was collecting "under logs material". He bring some Lorentzimys the type of which is the only specimen known. It rare (not jumped). Peculiarities are the long, very narrow ears, turgid upper lips (like Parahydromys), large head, very long vibrissae, long tail, slender hind feet,

short claws, mammary formula 1-2 = 6. The skull is short & broad, young enough for the tooth pattern to be seen clearly, large parotid glands, quite small eyes. On the whole one surmises that this is a terrestrial, slightly saltorial type of mammal of the deep forest. Possibly it frequents openings made by the fall of large forest trees. It had two embryos - 1 either side. Body preserved in formalin. The stomach contents thus very finely divided suggest insect and fruit diet.

This afternoon continued a long new trace for traps line that I began this morning. Rebaited my 10 experimental traps with combination bait.

Sunday, May 24. Yesterday evening managed to shoot two of a number of small bats which fly over the clearing at dusk & dawn (early dusk & late dawn). They prove on examination to be members of Emballonura, subg. Mosia. Their flight is wildly erratic & butterfly-like.

Nothing in traps unfortunately. Mammals certainly come in slowly here. We have 9 species and only 13 specimens altogether.

The Macroglossus is probably distinct from the species at Dare and Mabduane on account of its seemingly complete lack of a tail.

Another large Hipposideros was brought in and two specimens

of Nyctinomus, both females, so much smaller and so differently colored than no. 2264 that although they also possess greenish yellow marks on the wing digits + metatarsal I can hardly believe them the same species. The extremely small size 1.5 mm. of the eye opening of the Hipposideros in in great contrast with those of Nyctinomus (6.°) or Dobsonia (7.°). Two Dobsonia were brought in today, and the tail is suspended beneath the interfemoral membrane by a septum-like membrane. The second wing digit of ~~Hipposideros~~ Dobsonia is clawless but has the terminal joint crooked. The larger of the two Nyctinomus females has the mammae well developed; the second one is probably young.

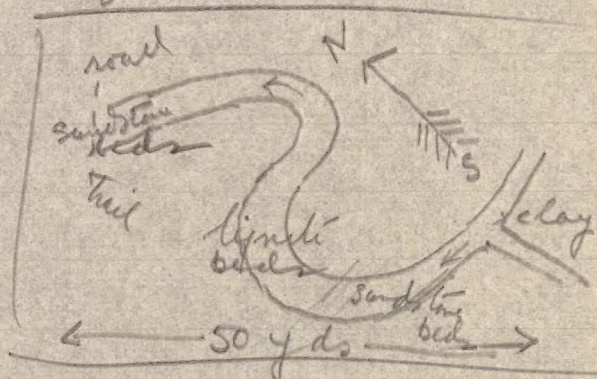
It was amusing to meet a string of bushmen heading for our camp this pm. Each carried a single small article - one a warbler, a second a small owl, a third a bunch of bananas, a fourth a bat, &c - & all wanting payment in beads. Today I offered a pocket knife for a cuscus. I use cuscus (their word sinai) for any large animal, as that is the only word of theirs I know. They showed plenty of interest & we shall see.

There is now no doubt of the two species of Nyctinomus. The female of the large one was brought in a little before sundown.

Monday, May 25. Again night. For two days though we have had quite a lot of cloudy weather rain has fallen seldom.

No mammals in traps but another of the large Nyctemene brought in.

Went to "third" stream where found sandstone beds in creek bottom. Got pebble of phyllite or very fine-grained quartzite which contains 3 shell-fossils ( ). I found also lignite strata containing what Bresse believes to be the spines of Araucaria. Also loose in stream bed a piece of silicified wood (? palm). In the clay at the junction of the two streams there were small inclusions of lignite up to 2 inches long. The sandstone is a loosely compacted, friable rock with beds seeming nearly horizontal. The up-stream beds possibly indicate a slight anticlinal structure. Could not determine whether ss above or below the lignite. Both topped by several feet of heavy clay.



This pm. changed my 10 experimental traps, which have caught nothing since they were set out first, from the crest of a ridge down to the river bank, far from optimistic however. A few bats continue to be brought in by local people. But a single rodent has so

far been brought by them. And we have yet to see our first marsupial.

Tuesday. May 26. Showers at night. Nothing at all in traps. Local natives beginning to go home to their houses & gardens, though some 15 or 20 still bring in odds & ends like bananas, crayfish, birds, an occasional bat, or fish. The brick boy still low but possibly improving. Going to give him a little more food. Bat net catches nothing but an occasional beetle here. All things together, I'll be very pleased to get away from this camp, though that will not be for a long time yet. Compounding a new bait of Eugenia fruit, coconut and honey.

A specimen of terrestrial Melomys brought in by locals – a female – the measures 3.5 mm across / width of hind foot across the metatarsals at their base 6.0 or more than 50%

Several more Nyctimene including at last a male of the smaller of the two species, also a Dobsonia brought in in the afternoon. Moved the bat net to span the "first" creek. Hope it may produce something besides beetles.

Letters from Healy & Willis were brought this afternoon by the Police Sergeant who came by raft from the Black River bringing down a police man who had cut himself with a bush knife. Healy wrote from the north bank of the Black, and Willis was due to reach the 610 mile mark on

the Palmer in a couple of days. They were fortunate in getting three natives with a canoe to ferry them across the Black — and the intervening country is "not too bad". The Police Sergeant with a spare man is to walk in again tomorrow. He left the Black this morning early but it will take him two days to walk back.

Several bats came at the last minute — Nycteris, Hipposiderus and that tail-less Macroglossus.

Wednesday May 27. Cloudy last night. Sergeant & new man left for Willis's camp this a.m.

The Macroglossine bat is apparently quite tailless, the tail being represented at best by a small tubercle. I dissected the terminal vertebrae of ♀ # 2291 to find out. Also in that specimen a claw appears on the 2nd wing digit as in Nycteris.

Two Nycteris, 1 Hipposiderus, 2 species of Melomys brought in by bush men — the prices, a teaspoonful of small white beads per specimen. It is noticable that in the terrestrial species of Melomys small ticks crawl about in the fur.

I saw today where the Sorentsuyo was found — a rather small hollow log lying down the slope of a steep ridge close to the crest was tapped by a boy's machete, and the mouse ran out of it.

An exceptionally clear day sunshine since 9 o'clock this morning.

the genus of bats new to the collection — Kerivoula was brought by a local native this afternoon.

Thursday. May 28. A curious incident happened yday afternoon. I had sent Aia & Kanamoia with 50 traps to put down a new line along the western crest of the river. About a couple of hours later Rand ~~found~~ saw them hurrying in along the main trail followed closely by a number of bush natives. From what we could learn the boys had started back along the main trail where the bushmen's camp is and attempted to circle it without being detected. However the bushmen saw them & said "boo", & the boys put on speed, the bushy lads meanwhile following them to see what it was all about. Anyhow, this morning just to play safe we picked up that line; & happening to have trapped a rat, to have the same two boys with me, and to meet a couple of bushmen I was able to put on a demonstration of the entire innocence of the boys' behavior. Incidentally, it was a very well-placed line.

The plane is in Port Moresby & due in Daru Friday and here on Monday. Archbold is holding the Daru fort alone.

Terrestrial Melomys #2308 trapped among roots of old tree in deep forest on high steep slope leading down to river. In addition to the above 2 more ground Melomys and 5 rats

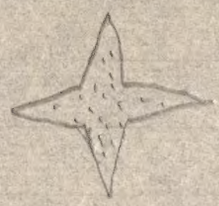
turned up, brought by local people before 2 o'clock.
Later a number of other bats including a new species of the genus Hipposideros.
Temperatures here range from about 75° to 85 ~~°F~~. Twenty six mammals today of which all except three were bats.

Friday May 29. Saw two medium sized bats this morning circling high up. One possibly shot by Rand. Dan duly promised.

Went up trail exploring the left bank of Sly R. Found more lignitic beds overlying sandstone, & across river very recent gravel beds being recut by river. Small animal tracks in mud. Have theory of the general geology of this area but will wait a while before setting it down. In P.M. cut new trail from bridge of "first" creek down-stream. The boys came back very late: they said they had been fishing, consequently eleven un-skinned bats were waiting for them when at 5.45 they got back to camp. If they caught any fish they must have cooked & eaten them out in the woods. They got the job of skinning the bats which took them until 8.30 at night.

The natives: What the well-dressed man will wear — a head-band, arm-bands, girdle & belt, leg-bands just below the knee. One fellow was dressed for some gala affair: his chest & abdomen & calves were colored dull red; his body was ornamented in front

with a 4-pointed speckled star done in white, thus:



, and the rest of him up to his neck was rubbed over with charcoal. His face was left untouched. Anotha fellow gave a demonstration of a rattle dance. He rattle a springy stick hung with many dry seed cases is held up like a tail behind him, while he jumps around in one spot. Their pipes are odd looking articles something like an angled piece of wick pipping in shape. The "smoke" is passed around. They sometimes wear collars of pigs teeth string on a cord. They shave their heads quite high in front giving the appearance of very high foreheads. They sometimes wear string net-bags. And each generally brings but one bird, bat or mouse and calls for "twice" (beads) in payment.

Saturday. May 30. Heard the heavy swishing sound of the wings of flying foxes around midnight but by the time I had gathered together energy enough to go out & look for them they had gone. Nothing in traps.

Took Kawamoca & the folding dinghy & went half way up to Palmer Junction in search of the big flying foxes we saw hanging on a tree when we went up by the "Maria". The bats were not to be seen. Found some bits of fossil material among pebbles. Great expanses of shingle bar now exposed on account of low water.

Sunday, May 31. Weather continues dry. One Melomys of the terrestrial species in trap this morning. Plane due tomorrow. Have 6. a. m. schedule with Dare.

Considerable series of bats and two or three Melomys brought in by local people. A new bat and a Uromys both new to this camp and the former to the collection. Mammals are coming in at the rate of a hundred a week just now.

Weather has changed & become rather rainy again. The Sly River is again rising.

Coming back with a large cricket in my hand from setting traps, I met one of the bushmen. He saw the cricket & his mouth began to water. He explained to me by the most expressive signs how good that cricket was to eat. Not content with that he shouted to his friends in various directions that one of the white people had a cricket & was taking it to camp; and from all directions & boundary came the answers.

Monday, June 1st. The plane went by at 8.30, having left Dare at 6.40. A good Melomys and a Phascogale the first marsupial for the camp were taken by traps last night.

June 1st - Monday - A tremendous rush today with the coming of the plane but particularly on account of the decision to move base camp to the junction of the Black and Palmer Rivers. The "Kono" was brought down on the Palmer just below that junction this morning, & connected with Healy and Willis there. The fact that such a landing can be made and will save days of travel has led to the above decision.

Archbold & Rogers had one of the Dani Kiwai boys in the plane to help make the air deliveries, but of course that proved to be unnecessary. They stayed with us until 3 o'clock and got back to Dani at 5.15 (so Tulstidt said this morning).

June 2nd Tuesday. Sent the boys out to pick up traps. Treanowhile did a bunch of packing up. Got rid of almost all my mammal specimens by the plane yesterday.

When the plane reached Willis yesterday it was learned that he and Healy had not progressed beyond the Black River. We think he mistook the junction of the Tully & Palmer for that of the Palmer & Black, perhaps. Any how there they were, recently arrived, and only a very small clearing prepared.

A female Pogonomys with two young, also a reddish Rhinolophus (4 specimens) brought in today. I am very pleased to get both. They

bring mammal species for this camp up to 18, 10 of which are bats. During the course of the next two or three days we are to be moved by plane to the mouth of the Black River. Tomorrow the plane comes in with a heavy load of gasoline & stays until she has moved everything. The flying time from camp to camp will be only 12 minutes, but loading and unloading will make a great difference to timing of the flights. A storm is coming up tonight so the river will probably rise more tomorrow.

Wednesday. June 3. A slight accident to the rear wheel made the boys at Dare put off today's trip until tomorrow. I learned of this at 10.15 when I kept schedule. We had most everything ready to be moved when the news came.

Quantities of bats continue to be brought in by the natives, though no more new species. The Nycteris females are mostly with embryos practically ready to be born. The embryo is large – almost as wide (long) as the thoracic width of the parent, which explains the ligamentous pubic arch in these fruit bats.

We had a demonstration of fire-making by a bushman this afternoon. A short thick dry piece of stick is split partly & the cleft filled with tinder. The stick is held

down on the ground with the fort, while a piece of withy "lawyer cane" (Calamus) is pulled rapidly back & forth around it. The stick smokes & bursts into flame, and the operator falls backwards to the ground, appearing much exhausted.

A new (for this camp) Dobsonia; but it looks awfully like the big one at Dare. Archbold told me tonight that the plane is fixed up and we are to expect them tomorrow. 31 mammals today.

The natives are beginning to offer us more and more of their beads & bows & arrows & armguards and pipes. I have not bothered yet to get any but want some just the same.

Thursday, June 4. Thelstedt reports plane ok & likely to start about 8 a.m. The river has risen 6 feet.

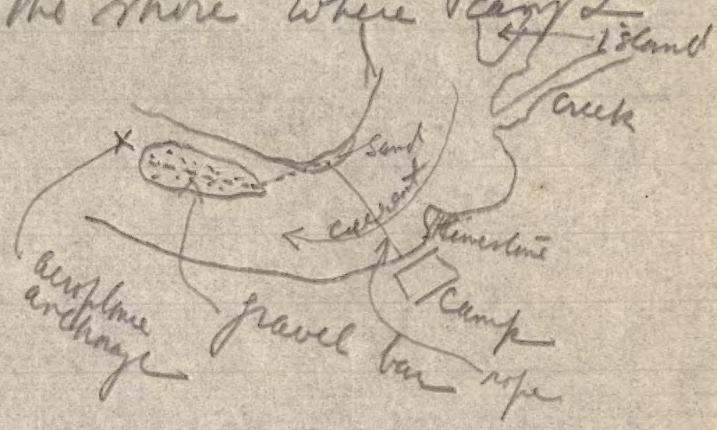
The plane has done a splendid job today, Rogers flying it alone. Three loads of people & equipment averaging 1700 lbs each have been taken this afternoon to the mouth of the Black River. Brass & his three boys and two of mine have gone. Here in camp Rand & I have had our hands full managing more than a hundred wild men of the woods. Persuading them to carry, keeping some sort of order & discipline among them, paying them off and finally buying all their birds & bats & sending them home. It's pretty hectic with such numbers & certainly Rand

handled them splendidly. Archbold stayed up-river where Rogers also stays overnight with the plane. They carried in 300 gallons of extra gas during their first trip from Darge in this morning. According to my guess we have still something about 4000 lbs excluding gasoline and 11 humans to be moved tomorrow, & that should be completed with about three flights, though it may run to four.

Friday, June 5. The plane arrived only at 10.30. Meanwhile Rand & I had closed up the rest of the boxes. The first load took two more boys, Aia and Kanasnoia ~~one of them~~, ~~and~~ both were. Next load (about 12.30) I went on with the radio, another load brought boys & cargo, a fourth load brought gasoline, & the 5th brought Rand, the police & another boy. Archbold & Rogers flew the ship.

At the landing plane came down she touched on a fairly long reach but had to make a fairly sharp bend before coming down "off the step". She anchored downstream from a gravel bar which is really an extension from the shore opposite that of the camp. From the tip of the bar our boys carried all materials across to the shore whence it was loaded into the collapsible dinghy

and pulled across hand over hand along a rope that stretched to the shore where camp is. The rough drawing herewith gives a general idea of the layout.



Our boys worked splendidly. The plane with ten pilots did very fine work (she used to take off downstream), & the entire move was a complete success. Rand said he gave away a lot of beads & tobacco & grates to the teeming multitudes left on the river bank.

The flying time to the new camp was only 11 minutes; but ~~what~~ rough & bewildering country we crossed. It is three days on foot at least. The new station is quite attractive. In one things it is right on the river. In another a few ~~trees~~ trees have left standing which offer partial shade. An interesting fact is that we are on a country rock of limestone now. And quantities of marine fossils are to be seen in the pebbles making up the gravel bar. But besides limestone pebbles there are quartz, hornblende granite & a much jointed jasper-like rock as well as

pebbles of conglomerate. I got my radio up & talked to Tulsteds at 5.30.

Saturday. June 6. This morning everybody was pretty tired, especially as the sandflies had paid us pretty constant attention during the dark hours. Sandflies here are pretties at time, & they can go through ordinary mosquito bar. Willis & Healy are now only a few miles ahead of us, though by this time they may have crossed the Black river. Aitchison & Rogers left about 10 o'clock for Dave. They were going to look at Willis on their way out. We have been busy today fixing things. I have got a better facial, & this afternoon put up some traps. We had dips in the river where water is cool & refreshing. Like the other camps this place is at yet teeming with stingless bees which crawl all over you. Bud & I took a walk along the forward trail this a.m. & both fell off a tree-bridge into a muddy creek. No harm done. Can see part of Mt Blicker from here. N.E., straight up the river the rugged crest-line, tree-covered, shows about 30 miles away.

Sunday, June 7. First talk about camp after dark. Hope to get some. Very heavy rain all night. River high and still rising. About 10 o'clock voices called out from one of the two camp entrances and there were half a dozen of the local Papuans. They appeared very like the people we left down at Palmer Junction both facially and in the ornaments they wear. Their language seems to be the same. They brought a small present of sweet potatoes & we gave them beads & tobacco. They were all shivering in the pouring rain. So we let them shelter in the boys' Ritikefa. Rain stayed with us most of the day. Time mostly spent fixing up camp. In evening rigged up the cyanide traps & caught several cubic inches of micro-insects.

Monday, June 8. Nothing in traps. Slight rain at night but river this morning almost down to normal. Lovely fine morning. Drying everything out thoroughly. Relaxing this afternoon Gorore found a terrestrial Melomys that had been caught during the day.

Tuesday, June 9. A tree Melomys only, same species as at last camp. One of Rand's boys shot a pig; but as it's ears are cropped it is pretty sure to be a village pig, & we shall have to pay them for it.

This afternoon Rand & I took the dinghy with one of the boys to row her & pulled up stream in search of the

mouth of the Black River. The sketch to the right shows the ground covered; we went up the west mouth of the Palmer and crossed through the eastern mouth to join the Black. Saw several gardens, one shelter where a canoe was tied below to the bank on the east arm of the Palmer. Some hard pulling in places but enough gravel bars uncovered to allow us to walk & have the boy pull the dinghy around. Picked up some very nice limestone fossils on the bars. No mammal tracks at all. At one corner of the combined Palmer-Black where it turns from E. to S. large expanses of gravel exposed & the river wide & lagoon-like. – a lovely spot (marked A on diagram).

The arm of the Palmer up which we traveled is lined with gravel & sand bars first one side then the other, and growing on them quantities of wild sugar cane, an evening-primrose, and a number of sedges. Going down the east arm of the Palmer towards the Black we hit a submerged boulder but no harm was done. The evening rain caught us before we could get back to camp.

Wed. June 10. Not much rain last night – river low, nothing in traps. Took walk to S.E. along ridge crest. Found native shelter. No people however.

This p.m. when boys were bringing aeroplane gas

across to this side for storage they did not see a large pig which was feeding in a native garden just behind them and watching them with contemplative eyes. Its cropped ears betrayed its village affinities as well as its familiarity. Our people on this side of course wanted to shoot it. We are building a tree-ladder from which when it is finished we hope for an extended view of the mountains. It is high enough now to make your legs ache — the ~~steps~~ rungs are only three feet apart. Moved a lot of traps this afternoon.

Thursday, June 11. Brass + Rand going up river to where we saw sedges on sand bars the other day. No rain last night. Overcast this morning. Nothing in traps. Finished the observation ladder but have not been up it yet as the mountains are clouded and there is nothing to see. Rand + Brass back at 6.30 — some nice fossils.

Friday, June 12. Went up new ladder: Star Mts seen to NW, Mts Saré + Daim due N. Blücher to NE. — but all partly hidden by cloud. Shot a big Dobsonia last night. A Melomys in one trap. Concentrated mass of steel traps along river side in attempt to get Melomys, but water came up most of day. Moved rat traps. This pm

disturbed nest of small wasps (Crabro) & got well stung. Back in camp found visitors from Wei Miu (River Miu) more than 15 miles away. They used wooden knives but had otherwise the same dress as previous people who have met us. The six of them went away later — presumably to sleep at some village.

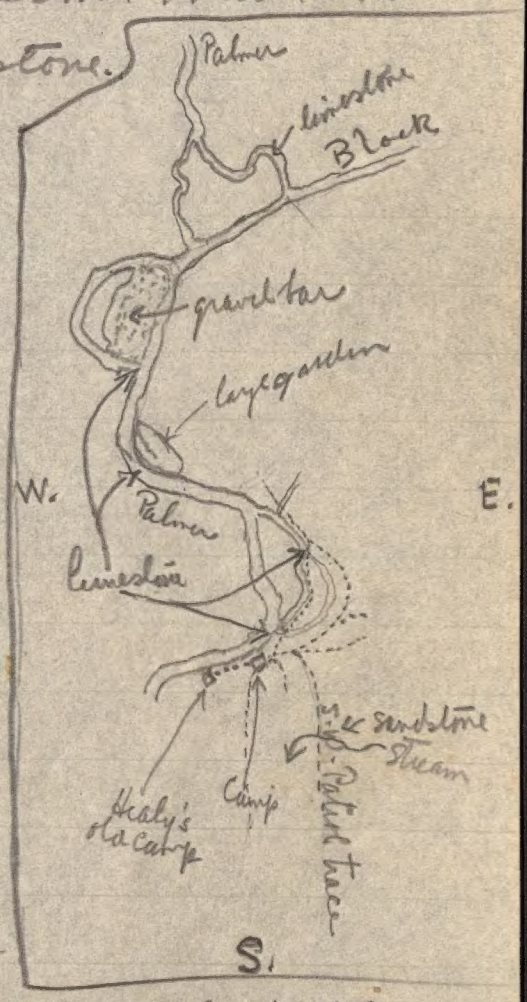
Saturday, June 13. Slight improvement — two terrestrial Melomys. River falling so large battery of steel traps set for Uromys may be able to function soon. Have be collecting all sorts of forest fruits to scatter about them. Uromys (if that's what the maker of the tracks is) shows no interest whatever in our manufactured bait.

Boys got back from hunting only at 2.30 pm. Sent them out again (after food) to re-bait their traps. Packed up geological material. Up tree-ladder but clouds too thick to allow me to see much. The visiting natives (of yesterday) did not show up today.

Sunday, June 14. Took Uromys at last in traps at river bank. It is a powerful rat & was caught probably about 6. a.m. Nothing else in traps. Showed boys trap-set & foot-prints, &c.

Took longish walk out along the NW patrol's track up for the south, from somewhere near the head of the north branch of Surprise Creek. The track still bears

plenty of evidence of having once had heavy traffic over it: the tree-roots are worn & exposed. moreover it runs through high ridgy country & is very straight & well laid down. Pity Willis & Healy didn't find it; they came over the old track which is more roundabout. A comparatively short distance brings one onto ridgy country, apparently formed of the same sandstone conglomerates which we had down at Palmer Junction. Thus the s.s. appears (?) to overlie the limestone. Saw no mammals.



When I came back from re-baiting this afternoon I found the Wei Min men back again – eight of them this time. They had brought a large pig, some sugar cane, sweet potatoes and bananas. We gave them a hatchet for the pig, & other gifts in proportion.

From the tree-ladder could see Mt. Sari, partly cloud hidden and over its right shoulder the much higher Mt Fairin (our destination) also partly misted over. (Note: our boys sing mission hymns every night to themselves).

Monday. June 15. Added three new mammals to this camp, that had all of them before at Palmer Junction: larger arboreal Melomys, Emballonura and the tail-less Macroglossine bat. In afternoon shifted trap-line to the ridgy country along the trace of the N.W. Patrol.

One of the boys who had been fishing off the rocks tonight got a twelve-pounder on his hook. It straightened out the hook & got away; but they had him half out of the water trying to land him with a kerosene tin.

As we sit in the mess-tent we catch a soft distant sound like wind stirring the forest foliage. It deepens quickly to a roaring sound as the rain of the tropics (not wind) comes thrashing down on the millions of leaves and sets up a drumming on the tent roof through which only the raised voice can be heard. The shower soon passes and the sounds of individual rain drops can again be distinguished, while all about us constant dripping tells of the rapid draining away of water from the tree tops to the ground.

Tuesday, June 16. Took journal Rettus and young Ummya today. The Rettus is a new record for the area. Eight natives have come with bananas & sweet potatoes, apparently from somewhere up the Black River region. In the afternoon they returned bringing a large pig for which they were paid a hatchet. We are certainly getting lots of pork.

Wednesday, June 17. Heavy rain in evening but river not very high, though it may have been up and down

during the night. Hope for view of the mountains today. Plane due to make first parachute delivery to Wills tomorrow at Blücher.

Weather proved to be exceptionally cloudy. Talked to Archbold 5.30 pm. No news.

Thursday. June 18. Weather rather hazy & drizzly for plane's flight. Two people say they have heard it (10.30), and it may now be inside looking over the mountain situation.

This morning a young bandicoot (Echinypera) in traps and another friend - living Melomys.

Jim natives just brought in a cassowary.

Plane just arrived 10.50. Deliveries successfully made. Wills & Healy and all seemed to be in good shape.

Closing this letter now to send out by plane.

Thursday, June 18. The plane has just left (2 pm). She completed her first air delivery with complete success as I said in letter #17.

Also the first native has brought in the first specimen — a snake. So in the next few weeks we may get quite a lot of material.

Russell was telling us some of the tales their "aeroplane boy" has been telling around Dare: of the marvellous things they had found in the interior, trains and motor cars, and great open spaces peopled by thousands of pigs which when the plane dived at them scattered in in all directions.

Spent nearly an hour up the tree-ladder this evening. Was rewarded by getting a view of the mountains beyond the Strickland, showing pale blue-gray above the eastern end of Blücher. Mt Sarré eventually came out and I saw most of its crest-line.

The cargo delivered by plane, by the bye, were 900 lbs making 5 loads, two of which were parachute loads, the others rice (small bags enclosed in big loose bags); and the time occupied in circling and throwing the stuff out of the plane was 14 minutes.

Friday, June 19. Last evening entirely clear & starlit. This morning back to fog and rain.

Taps n.g. today. Went out along S. trail. Got off quick shot at cassowary as it slipped through the forest like a giant red-and-blue-necked chicken. I didn't hit it however as it glided behind a great tree-trunk and never reappeared. Bumped into another damned wasps' nest and in knocking the creatures off me broken frame of my glasses. Have had to repair them with piece of wire.

The local people have brought in a few birds this morning. Hope to have some mammals from them also during

the next few days. In afternoon went out to locate new trap sites.

Saturday, June 20. Nothing in traps. Set 18 steel traps in places located yesterday afternoon. Found tracks of large bandicoot on shore, which hope to catch sooner or later. Set 17 mouse-traps for a small marsupial (probably the lesser arboreal Melomys of this camp) which sometimes comes down & walks about on river mud. Going out "jacking" tonight – suppose it will pour with rain.

Got exactly nothing. Walked out along the S. trail for about 2 miles, getting to my limit at 6.45. Waited till 7.15 for total darkness, and then switched on light & started back, getting in at 8.15. A slight drizzle developed but not wet enough to be troublesome. While waiting out there in the forest in the deepening dusk kept hoping to catch some sounds of quadrupedal life – not a thing. A few pigeons & other birds sounding their go-to-bed calls. The story whirring beat of bonbills' wings as they flew by overhead. And with darkness, frogs and crickets turning up. That was all. Coming back I saw many points of light like glittering diamonds on logs and trees which I knew were reflections from the eyes of spiders.

Sunday, June 21. A Rattus and a terrestrial Melomys, the former probably allied to R. mordax. Nothing in steel traps. In p.m. found traces of Uromys around a tiny pool in creek-bed where some little fish had been killed by the hot sun and the shrinkage of water. Set traps there. Uromys must go about during the day time but so far nobody has set eyes on one.

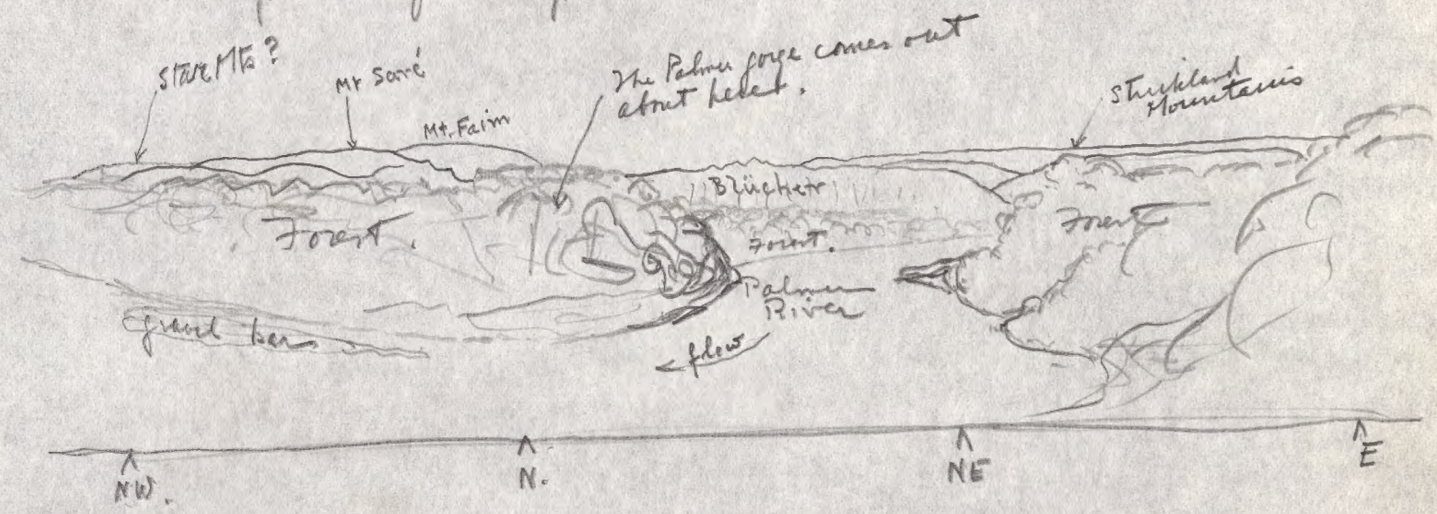
We had about a dozen natives in camp today; they brought a cassowary, a few birds, and some sweet potatoes.

The plane is coming in again tomorrow, or

so Julstedt said by radio this morning. We think they are a day ahead of time and Wellin may not be ready for them.

Monday, June 22. We layer arboreal Melomys in a steel trap set made in the dry creek-bed + baited with fish. No other mammal. Heavy rain last night between 12 and 3. Plane coming in this a.m.

Got good look at mountains this morning from our ladder look-out, but rising mist soon covered them up. Mt. Daim clearly visible over right shoulder of Mt Sare. This is the picture from up the ladder:



For the first time the local natives brought in some mammals this afternoon: a bat (Nyctenirene), a Melomys and a young Phalanger.

The plane did not come after all. They discovered at the last moment that tomorrow was the day set, so tomorrow they will come instead. Julstedt told me tonight that they have a new radio receiver in the plane.

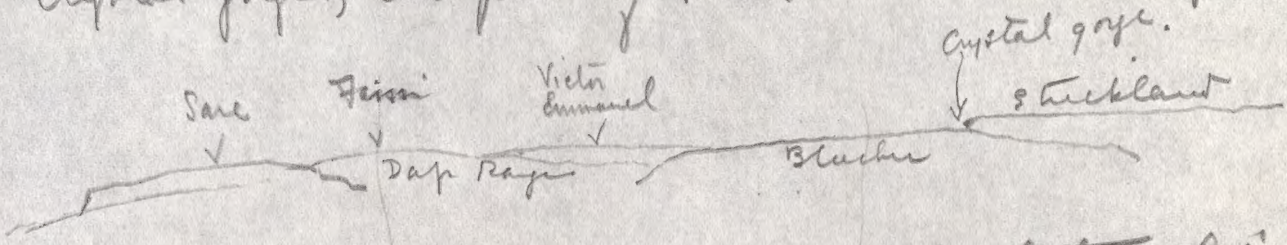
Tuesday, June 23. Plane is supposed to be on way. No specimens in traps. Starting a garden: the soil very loose, humus-filled and matted with roots.

But at noon learned from Dave that the plane had found the mountains clouded in and had just returned. A bat (Nyctenirene) shot by one of Rand's boys.

Two more Nyctenirene brought by boys this afternoon.

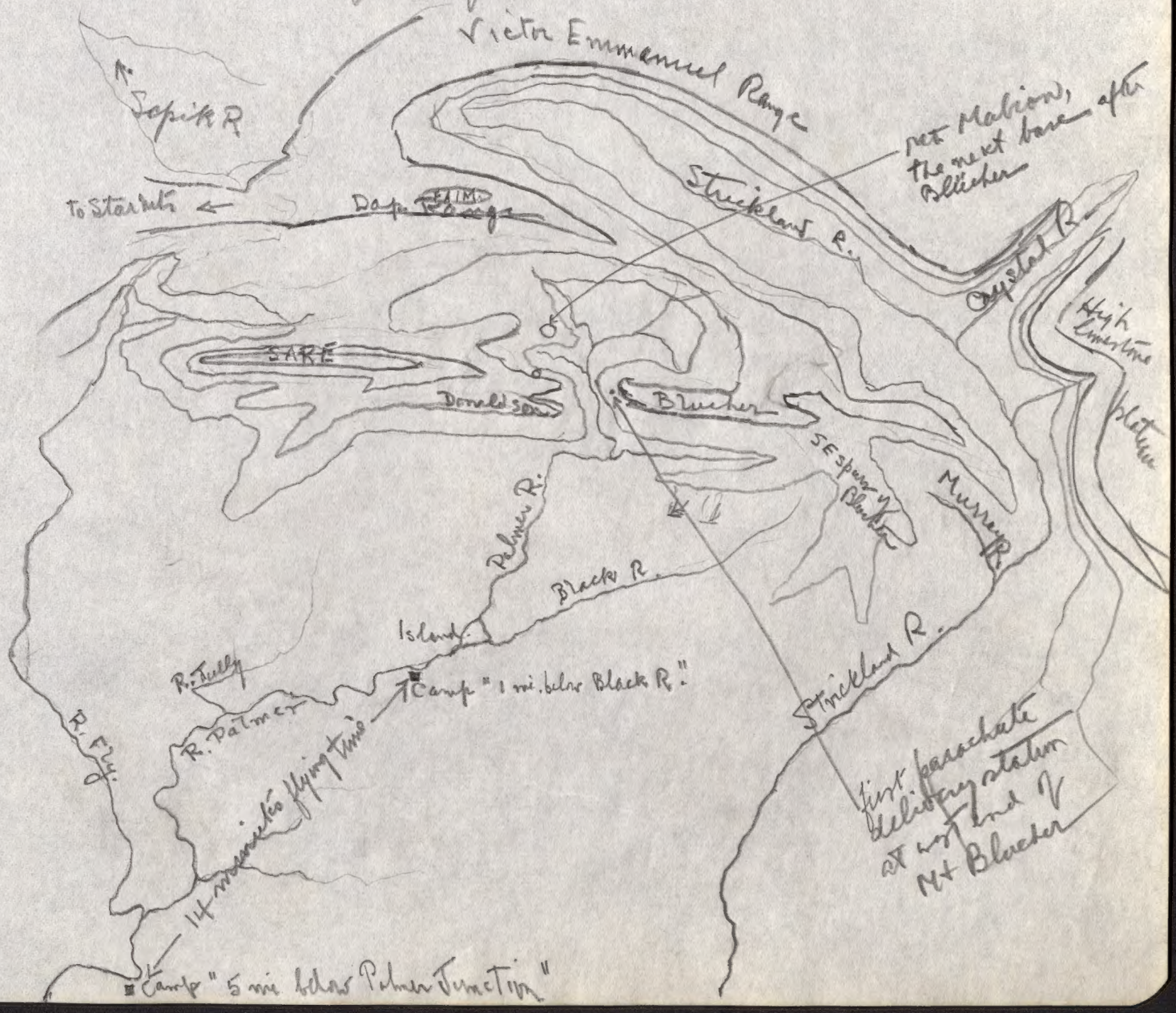
Wednesday, June 24. Yesterday from one of our policemen got a shot at a crocodile. They must be very rare up here.

Magnificent view of mountains: Saw steep scarp at western end of Saré facing on Sly gorge; almost whole of Dap Range; Strickland Range with SE side of Crystal gorge; and part of Victor Emmanuel Range.

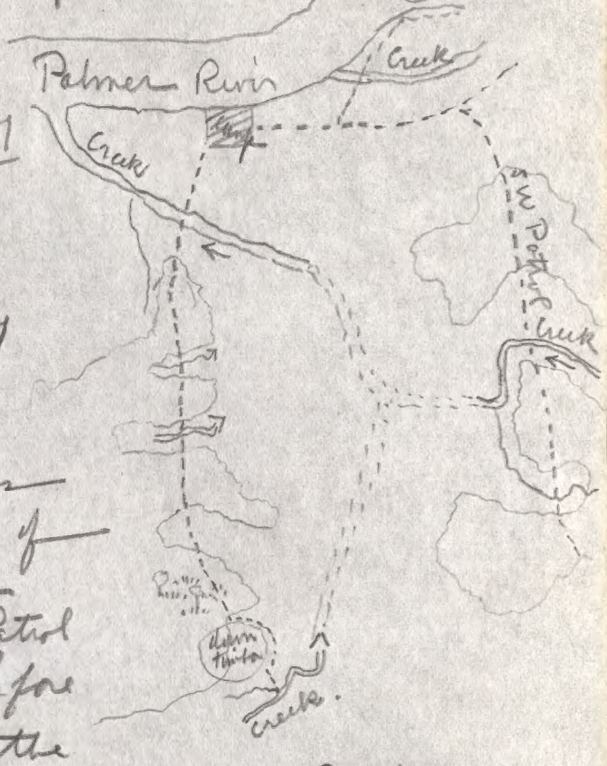


The above is very rough but shows their relationships to one another.

Note: Eyes of Macroglossine bat # 2465 are luminous.



The sketch map on previous page represents an attempt to map what I have seen from the tree-tops in consonance with information previously obtained.



This afternoon took new trail cut by my boy Sororo few days ago. It leads south parallel with the track of the NW Patrol but more to the west, and ~~it~~ traps broad ridges with swampy tops covered with moss-grown vegetation. The large creek at the bridge runs over limestone and has cut into it to a depth of a couple of yards. Nose further south runs on gravel. The large creek on the SW Patrol track is dim to the limestone. Just before reaching the area of fallen timber the track passes some very interesting swamps forest. I intend putting traps in there again.

Thursday, June 25. The boys caught a male Uromys. In another trap a bandicoot had been caught but all except the hind foot had been eaten by a pig. The hind foot measures 55 mm. s. u. The Uromys with median chin tubercle carrying two vibrissae.

The plane is on the way. 9.30 a.m. Heard her go by. Intervisible from here. Clouds drifting from east to west or SE to NW. 9.45 – Plane came in. Reported mountains clouded and invisible. Staying over night to try again in p.m. and once again next morning very early.

Rain came on at 5.15 pm. Weather bad. Hope for better luck tomorrow. Plan now to drop note to Killis to come out with sufficient carriers to take me and radio in to Int. Mateson so that I can inform them at Daru as to the local weather. If they can make delivery tomorrow Killis and his men ought to get here about Tuesday (June 30) and we should then leave on Thursday and get there late Sunday (July 4th).

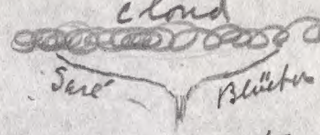
By that arrangement we can let Ryan and Archbold know the mountain weather and they can act accordingly. So as things stand our local weather is of little value in telling them about the mountain weather.

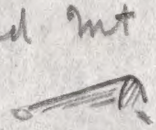
Friday. June 26. Cloudy morning and still no sight of the hills. Aeroplane still here. Cloudy Champion came along with plane as guest-passenger. Nothing in traps. Crocodile (6 feet?) seen swimming in river.

In afternoon still cloudy and no flight attempted. Stars out tonight however, so perhaps tomorrow will be all right.

Saturday. June 27. Only a little rain locally but must have been quantities in the hills, for river very high. Plane going to have a try to make delivery this morning. 9.05 Plane took off: 9.55 back again. 10.30 I flew in with them to get a look at my new course & camp. Scenery magnificent but will describe in next letter.

Sat. June 27th. L.20. P.1.

The flight made today which I referred to in my last letter was very interesting. The clouds were low and we flew just against the ceiling towards the foothills. Bronnier small hills with very high south faces project from eastern Blücher ~~towards~~ the Black River. As we flew on up the winding Palmer towards the hills the foothills of Saré and Blücher filled the whole northern horizon. We edged over to the east a trifle and rounding a spur of Saré made out the narrow, slit-like gorge of the Palmer ahead of us. It looked somewhat like this: 

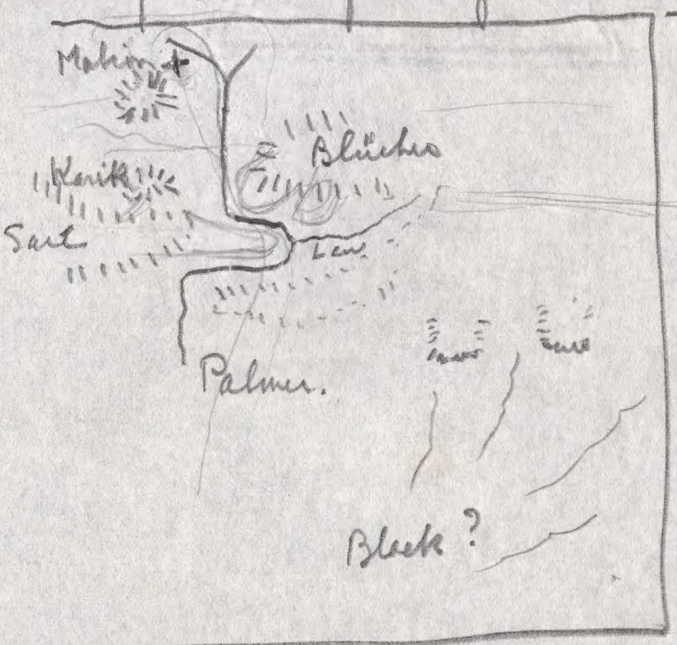
We flew in along the top of the gorge towards the sun-lighted interior valley, passing on our right the clearing on the top of Blücher formerly occupied by Willis. The small pointed Mt Kavik was passed on our left, and the  -shaped Mt Mabrin ahead and to the left. The clearing lay on the N or NE side of Mabrin.

The whole interior valley is indescribably steep and rough, and all forested. Two parachutes and three rice loads were set down in the clearing. Could see Willis and a few boys standing there, but not Healy who was probably exploring trail.

Coming out was easy. The great Saré scar (a landslide on the limestone face) showed plainly half right, and we could look out under the clouds & see the plains. All the way out we flew above the gorge which was now brightly

lighted by the sun, much of its interior was clear white limestone.

Outside I saw the Lem for the first time. It seems to rise somewhere about middle Blücher and this side of the steep-faced hills which I mentioned a bit earlier. The sketch maps give my idea of the general lay-out.



The Palmer River had all its gravel bars exposed and dry, so the high water we are experiencing must fall come from the Black River.

Spent the afternoon going over equipment, settling what to take in and what to leave here. At 5.30 Dave informed us that the plane had returned at 4 o'clock. So that's that. Rain once more tonight, but very few insects at the light.

Sunday, June 28. Overcast. One Melanys in traps. Shall be glad to move up to Mabion; perhaps collecting may be better there.

In traps a Melanys, and later the local people brought two more and a Nyctomene. The seeds in the garden are nearly all up. We have radish (2 kinds) turnip, Chinese cabbage, pumpkins and tomato.

There are now about 30 local natives who occasionally bring a bird, bat or other creature. A number of them have put up a shelter across the river, so it looks as though they intended staying a while. They speak the same language as those we had with us at Palmer Junction. We have now a bit of their vocabulary, and Champion & Karius some years ago got quite a lot of it. Today they brought sugar cane tops which our boys promptly planted in the clearing. Some are dark-skinned, others remarkably pale. They have scooped canoes on the river & paddle them with the usual primitive paddle — a cleft stick with a bit of bark secured in the cleft.

Monday, June 29. Fine rain. River high. In traps a fourth sp. of Melomys — badly cut up by traps. Long tail dark above & below. Color brown, under parts white to roots of hairs. A non-breeding adult female. Skull with short rostrum. This may be M. gracilis.

A bad day: Rain most of day. Went out along new trail described June 24. Found that my boys have pretty lengthened it. In afternoon took walk along old S. trail. Locals brought in some sugarcane and bananas and a Nyctimene.

Tuesday, June 30. Rain at night. Big flood in river this morning (both Palmer & Black must be down). Heard it at 1 a.m. It is only 6 feet below camp level & just even with the little native house on the other side. The water goes rushing past & every now & then a strong up-well breaks on the now deeply submerged limestone. This high water will make things inconvenient for the party coming out. By 10 o'clock the river had sunk about a foot. All the creeks up in the woods are backed up with 8 or 10

feet of water and the trips had to cut a long round-about track in order to reach the trap line. Both Dave and Port Moresby tell me they are having unseasonable weather with lots of rain.

The daily 24-hour temperature (max. + min.) ranges from 86° to 75°, practically the same as in the Palmer Junction camp. This afternoon patches of blue sky + sunshine; but the mountains remain invisible. The river level is now down 8 feet from the high.

This camp has been only a moderately good one for me. It has given me two or three species of mammals that I did not have from Palmer. But I expect they were there (exc. perhaps the fourth species of Melomys). The worst pest here is the punkies (sandflies) which can go through mosquito bar. Leeches are moderately common but not too bad. House flies are quite a nuisance; stingless bees, as they usually do after a few days, have now quite disappeared. I'm really sorry for Bress + Rand who will probably have to spend the best part of a month here yet.

Wednesday, July 1st. Another month; + half the year gone. Weather light rain most of night; this morning mist and drizzle. The river up a little.

I have this morning designed a short cape of oilcloth with a hole in the middle to put the head through — one for each of my 4 boys and one for myself. At present they cause considerable mirth but I fancy they will be appreciated in the hills when trap-lines have to be run on cold rainy mornings. They are something after the style of an S. American poncho but quite short.

Sunshine at 11.30 but hills still dark. The weather continued to clear however and by evening the mountains were all out and we had bright star light. I think this marks a change for the better in the weather.

At 7 pm just after day the people from Mt

SUPER
RING BOOK BOND

Frabrin arrived. They consist of the police sergeant and one policeman and 15 carriers. Though muddy from travel they did not appear very tired. They look to be in fine condition. Blue took ~~them~~ for strangers and bit one of them.

From Willis's letters which they brought I expect to need five days to get in to the mountain base. The packers apparently came out in three but they traveled light. I expect to go only a couple of hours the day after tomorrow and get across the Black River. After that it is trail – and mostly bad trail.

Thursday, July 2. Misty. But the mist-drip did not commence to fall until 5 o'clock. It might to clear up speedily.

13

Thursday, July 2.

Had to stop last letter very abruptly — the plane was leaving. They got back to Daru about 5.15.

A new lot of natives came to visit us today. They live a bit to the north of the Black R. and wear slightly different ornaments from those in which the local people dress. Tomorrow morning we pull out. The plane delivered yet another 1500 lbs of provisions to the new camp west of Mt. Mabron. Heard the plane's radio as far as the Aramea River.

We got a Pogonomys (2 small embryos; mammary formula 1-2=6), a terrestrial Melomys from our traps and a Uromys from the locals.

Friday, July 3. We woke up to find heavy rain falling and the river once more high. Both Daru and Port Moresby report bad weather. There'll be no getting away today. Slight improvement in the afternoon but the river has not yet commenced to go down yet. Wind S.W.

5. o'clock weather clearing quickly. Probably get away tomorrow.

Saturday, July 4th. Quite the date to be starting out on a journey! Had last talk with Daru. Now packed up radio. We got away at 9.15, passed the big gravel bar below the Palmer-Black island at 10.30, the junction of the main branch of the Palmer with the Black at noon, and reached the place for crossing the Black at 12.30. The rafting was quite easy but a bit slow, however we were all on the other side by 2 o'clock, and a steep slippery climb brought us to a camp (an old site of the N.W. Patrol). Tony aneroid read 100 metres at the river and 150 metres on the hill-top. The climb felt like that too.

The trail as far as the crossing follows the river closely. The South side of the Black is very up + down, the "ups" being the conglomerate of our last camp, the "downs" muddy swamps overlying limestone or simply deep ravines.

It has been a gloriously fine day — propitious for the

outset of a very interesting trip.

Like all newly occupied camp sites, this one is full of stingless bees, and I have noticed some examples of the biting fly Stomoxys which so torments Blue down below. A fair sprinkling of mosquitos is here also. The ridges here north of the Black are also formed of silty conglomerates. They are high and steep-sided. There is an old Vacuum Oil tin here (also seen by Willis and Healy) which must be a hang-over from the NW Patrol. It shows how long 5-gallon cans can last in tropical rain-forest.

July 5 - Sunday. A good night - moonlight & no rain. But Blue restless. There were mosquitos or fleas or something around. Gave instructions for an early start - the boys' cook to go to work on their food at 5.30, my boy (Kanemoie is cooking for me) at 6 o'clock.

It has been another good day - and what traveling we have done! - nearly 12 miles by the map taking it "as the crow flies". We moved out from Black River camp just at 7.30. First a series of ridges followed by quite a bit of mucky low ground but the police avoided a bad swamp mentioned in Willis's letter by going west of it. I was a bit disconcerted to find the Sergeant cutting an entirely new trail along a ridge. That makes progress too slow for the packers who still must carry their loads. Moreover they shot a pig which was proved by its wet ears to be a village pig. I could not allow them to take it because if I did they would shoot all the village pigs.

Presently we heard much confused shouting ahead which came from a village ahead of us and on the Palmer. That village was deserted (it is one house or two of poles) when Willis went through. About 12 men stood up on the top shouting "Semtore" (friend) and there was much hand-shaking native fashion, which consists of interlocking

the knuckles of the fingers & pulling them L 21. P. 2.
apart with a snap. There were women & children
up in the house but they were tightly barricaded
in and we never caught a glimpse of them.
As we came up the hill a pig was butchered, and
one of them exhibited about 60 inches of bloody
arm-head. The killing of a pig is a gesture of
hospitality. In the midst of an immense
amount of gabbling I offered them a knife
if they would bring the pig (and some sweet potatoes) along to Healy's
camp. They agreed. On top of the next ridge
I found one of Willis's camps. And when we
got half an hour or so further I realized
that the "Healy's camp" we then came
to was not the objective at all. There was
nothing to do (11 a.m.) but halt, cut up the
pig, issue some rice & have a feed. My boys
needed & wanted it. But I stipulated that we
move on afterwards. We presented the villagers with
some rice.

I forgot to say that the two men who left our
base yesterday with us turned up at that village
(they live up the Black somewhere), and came on
with the rest. They had been hunting birds for
us for some time. But the present lot of men
had visited us once too.* Well after "pigging"
all but these two turned back. They came on
wanting to carry. And they are here in
camp & want to go on tomorrow. I'll probably
give them some unimportant loads to help
the boys, that they may depart in the
night with the family jewels.

To get back to the road: we soon reached a
parting of the ways & the sergeant assuring me that
the other was better than that taken by

* See July 8, L 21, P. 1.

Willis & Healy, I thought I'd take a chance. It probably may have been better, and I suspect it was quite a bit shorter. The beginning was pretty low & swampy, but at length it worked out to dry ground & up onto a ridge where the Willis Healy track rejoined it. A moment later we were once more looking at the Palmer about 100 feet below. At that place there seems (through the foliage) to be a junction of two streams one with green water the other clear or bluish. But when we got out below we were so shut in by flood plain vegetation we could see nothing. We walked for ~~nearly~~ about a mile along beach which reaches round the entire bend from E-W to N.S. at the foot of the Donaldson range. And a few hundred yards farther climbed the hill to Healy's camp.

I'm very pleased with the day's work though the two Kiwai boys who carry the biggest of the radio loads (110 lbs) were pretty tired.

Our two locals suddenly got scared of something about 5 o'clock & decided to go home.

We had a shower at 5 but though Bluebird is quite clear, the rugged peaks bearing NE, Sare & the pass are both obscured. I believe I saw glimpses of the great Stuckland Mts. due E. too. All this last from Healy's look-out clearing below camp. Had a glorious dip in the river. The barometer (at 6.30 pm) reads 120 m. Zero meter is set at 74.5

Monday July 6. Morning barometer (6.30 am) 120 mm. Light rain all night. Sare visible NW from here, but foreshortened considerably - very precipitous. The Stuckland hills (that must have been cloud last night). River up a little.

I omitted to say that both those pigs of yesterday were paid for with knives, and the sweet potatoes with tobacco.

The same conglomeratic rock forms all the high ridges passed during yesterday's travel, and we are on it here too. It looks to me as though the east-west course of the Palmer and Sea marked a fault. The limestone is of course under this present ridge and down at the Palmer has been easily deeply cut by the river.

Put out 20 traps last night & the night before but caught nothing in them.

Evening. — Well, what a day this has been! First of all everything I said yesterday must be modified because we were not at the 610 mile corner at all.

We got away at 8.30 after the rainy night. Much of the road followed the river closely and consequently was low & possibly subject to flooding. About 11.30 we came out of the shingle once more for a while and found ourselves going west (of all things), but gradually wore round to north again. We kept getting glimpses of Mt Donaldson as we got to peer out of the forest across suitable places on the river. Just about then passed a bush house (new) but no people were to be seen. House on low hill.

Quite suddenly we reached a reef of limestone with strike about NW-SE which we climbed over in a couple of minutes and a quarter & an hour later reached the actual 610 mile mark, where the Palmer makes a right angle bend from E-W to N-S. Across the river is a high wall of limestone which turns the stream and is obviously a continuation of the reef just mentioned. We stopped for a short spell on the corner, then turned due east and started upstream once more. On our right a sheer wall of rock a hundred feet high; more immediately left the river a score of feet below the trail; and the trail itself climbing about and the forest-

-clad rock debris. It was rough going all right, but it had one redeeming feature: it was practically straight. In consequence of that we got to the mouth of the Lew at 3.15. It was rather horrifying to have to leave that limpid stream and climb about 300 feet to Willis's camp on the top-top of the hill. Even that was reached in 15 minutes.

As we came up towards the Lew I noticed in the little streams crossed from time to time pebbles of rounded sandstone, rounded quartz &c., obviously remnants of the same old conglomerate I have repeatedly recorded. Now I find this ridge capped with it. Also the ridge falls at once towards the south. My interpretation is that this range (which turns the Palmer westwards) was up-faulted, and that at this end the cap of conglomerate which lay over the limestone has not been completely eroded away. We may even find traces of it on the approach slopes of Blücher.

Just on top of the hill we came through a bush garden and a bush house but all deserted (temporarily at least). There are mosquitos here, but thank goodness no stinging bees. I suppose the sand flies will be thick there. Barometer (at 5.20 pm) 210 meters.

Tuesday, July 7th. I didn't say last night that from a score of paces back along the trail the great white landslide of Blücher can be seen. It bears 20° east of N. (magn.)

Barometric reading (6.30 a.m.) 180 m. A good night with only one shower. Clear today. The sandflies were out in force as I feared.

We got away at 8.30 + passed Healy's camp at 9.30. Limestone here high on ridge + not much conglomerate. Down to Lew 9.45 and then up its left bank (some pretty rough too) to the ford at 10.45. It was only knee-deep. Followed small brook (Barometer at crossing 120 m.)

northwards, & left it to climb onto bordering ridge to east, where Healy's camp (11.15 am) followed up ridge: noisy torrent on our right which is probably the north branch of the Lem. Steady climbing till 12.15, then very much steeper and rougher. Hard going for the boys carrying the 110-lb motor generator. At length reached Willis's camp at 2 o'clock. Some trees have been cut to give view out over lowlands just a bit west of S., but nothing else visible. Willis gives the altitude in his letter as 460 metres but I get just 520 (4 pm.).

We are shut in on 3 sides by forest which grows among the much decomposed limestone. There seem to be almost no stinging bees, but instead a number of active & persistent tabanidae.

6.15 pm. It looks as tho' the weather were changing for the worse. All misted in – and rain threatening. I'm thankful to be across the Lem, for it will surely rise tonight.

Wed. July 8. The rain did not last long, & the last half of the night was bright moonlight. Misty this morning, tho. Barometer 500 metres. Traps caught 3 small rodents, Melomys I think but not sure. They are in formol.

On the road by 8.30. At first kept a little below 500 metres level but eventually dipped sharply to Healy's Camp in gully (350 m.) which reached at 11.15. Entire course over limestone & completed frosted in – course W. From Camp (after 15 min spell) followed up brook, then climbed high ridge on W. side. That ridge is capped with our old friend the conglomerate, and yesterday on the way up from the Lem I noticed a patch of it at 400 m. From the crest of ridge (500 m.) the big Blücher landslide could be seen through the forest screen bearing 80° E of N. at noon. Continued along crest & quickly found ourselves on Palmer drainage (instead of Lem) where we crossed the first sizable brook the junction of conglomerate

was at 470 m. The plane of junction seemed to dip slightly to SW. On way up to conglomerate ridge from H's camp found exposure of what I thought was hard slate dipping about 30° NE and with NW-SE strike. It was certainly finely laminated but may just possibly have been limestone. In many creek beds there is secondary limestone, very recent and deposited on roots of living trees. The boys call it "cement", not inaptly. It certainly looks like wet concrete.

The present camp (6 bags rice camp) was reached at 2.15. We passed another of Healy's places at 1.30 but pressed on. We are on a little ridge (conglomerate) but still so hemmed in by forest as to be unable to make out much of anything. I fancy the tip of Blücher lies about NNE of us. There is a big mass to the SW and of about our altitude which must be the toe of the Saré-Donaldson massif which deflects the Palmer (below its gorge) so far eastward to make junction with the Lem.

The boys have been splendid. For the first time (due to consumption of foods) I have been able to put four onto the heavy radio load. I think it reached camp first. I had a sample of the six bags of rice left here by Willis opened. One was good; the other slightly mouldy. The barometer at 4 pm reads 510 meters.

Since writing the above I have been out to look around again. I think the mass to SW is still Blücher. Can faintly make out Saré for 10 miles due W. and a mist that is probably hanging over Palmer Gorge. The spur we are encamped on runs E. and W. Alt. 6 pm. 500 m.

Have heard flying foxes only twice: last night and at north bank of Black River (last night out).

There is no doubt of Mt Saré due W. It shows only the end view towards and its northern face is nearly perpendicular.

Thur. Fly. 9. Heavy rains during night from 9 o'clock till 4 am. Don't know how we'll get along with crossing the Palmer. The place is full of the sound of rushing water. Barometer 6.30, 500 m.

One more hectic day. On the road by 8.30. A rotten trail with nearly all side-hill work. We must have crossed hundreds of steep crested ridges alternating with hundreds of rushing brooks. The general trend however was downwards and we at length came out on the Palmer (by the Yankee people called Lucas) at 12.00. On the way across from the previous camp I twice more saw old shales (or shales?) exposed in in brook beds - much jointed but apparently level bedded (at these spots). At 10 o'clk got a glimpse of Mt. Karik nearly due west.

We reached the Palmer a short distance above the gorge, and ~~a quarter of~~ a mile below the mouth of the Narin River. The local formation is striking: at least 50 feet and probably more of soft dark gray shales considerably deformed & jointed, and their beds tilted to dip about 30° (I've forgotten the strike). They at once made me think of their being old lake bottom, especially in connection with the Palmer gorge. They are probably young.

Mts. Karik and Mabrin and part of Blücher were visible but their tops were cloudy. The Oplane could have come in easily however.

We crossed the Palmer at the mouth of the Narin by felling a tree to a gravel bar in the middle and wading the rest (otherwise we would have had a long, round about road to follow), and the sergeant cut new trail NW up towards Mabrin, with the object of striking the trail from the east camp to the new west camp. He did a good job too. From 190 meters at the crossing we worked gently up to 300 where we passed through an immense quantity of old garden. At length we struck a bushmen's track that led steeply up to a village that is perched like a hawks nest on the tip of a spur of Mabrin. There we were greeted by cries of "Seno! Seno!" (friend) by a little man dressed in little else than a tremendously long, curly gourd who danced around in a transport of excitement. The village was built, as I said, on the very tip of the spur & consisted of about 4 houses there were 8 or 10 men & some boys & doubtless women but we did not see them. We moved out westward for a quarter of a mile & made camp where Willis had had a baggage relay station.

Right at the beginning of the climb I found the hard shales

and about 300 meters (I think) limestone. There was also a little conglomerate. From up top got fine views of Blücher & Karik. The original Blücher delivery station was pointed out to me by the sergeant.

Our new friends (Senio) fairly flooded me with taro. So much so that I had to sign to them to bring them on to the new camp tomorrow. (How that idea is conveyed I'll leave to your imaginations) I'm pretty sure that we can use the food, but I don't want my boys to have to carry it. It has been a big day – from 500 meters down to 190 and up once more to 500 (which is the reading at 7.15 pm.). And I think the short cut has taken off many a mile. The rain started early tonight, about 5.30.

Well we should reach Willis fairly soon tomorrow, and then let's hope the radio works efficiently.

I have just taken the approximate bearing of Mt. Mabrin and find that we are just about S.S.E. of it which makes our position even better. Just beside camp a landslide has at some time swept by – the debris is all limestone. Mabrin itself towers above us for another couple of thousand feet.

My boys appear entirely happy over in their tent-fly – at least they are singing away lustily. They know too that tomorrow is the last day and a short one too.

Friday, July 10. Heavy rain till midnight. Misty but clearing this a.m. Barometer 480 m. Blücher bears just S.E. from this camp. The villagers came over & brought me half a baked taro. They call Mt Blücher "Dip"; the names Mabrin and Karik stand; S'ré is pronounced "Salé." Got out Champion's Unkia vocabulary & tried it on them. Most of it works.

Karik from this camp bears S.S.E. Left 8.45, arrived camp 10.45. The track led up through extensive taro gardens and along the south side of Mabrin. An hour later it began to climb steeply and the end of the second hour saw us at the big clearing which Willis is still enlarging (note that at last I have a new sheet of carbon paper and can go back again to punched paper).

Drank 3 cups of cocoa & some scones while we

swapped yarns. Then came a very welcome lunch, after which we turned our attention to the radio. Ran a nearly vertical aerial, and found reception good. But it took the best part of four hours to get the generator started.

My village friends squatted all around the clearing on fallen logs. Bill Willis paid them off with salt which they are crazy to get. The sign for salt is you lick the palm of your hand. They all departed about one o'clock. There were some other among them who we understood had come over from Bolivip village to the west.

The trail from Mabrin to village to the present camp (called Kori-sala) has at least four tracks running off to the s. and one of them is said to go to Mt Karike.

Although the new camp is on a ridge the forest around is still high enough to shut out a lot of the view, and our only outlook is to the south and west. Ridges prevent all other views. From Camp Mabrin (close against us) bears SE; Karike S. by W.; ~~and~~ the east end of Saté SW and the west end due W.; the Palmer gap bears about S. by E.

Got time signals from California at 6 o'clock & turned in early. A clear starlight night & the moon came up at midnight. 9.99

Saturday, July 11. Bad news today: ~~the plane fell~~ 100 ~~feet~~ at Port Moresby, and sank. No injury but according to Moresby. The new plane now in for a New Guinea Airways plane to fly another 1500 lbs of food to us here and for us to collect for a while & then pull out for Black River. What a calamity for Archbold! Meanwhile the Traira is chartered once again and coming up with three months provisions on board. Archbold will come with her, bringing Maidment's launch the "Wurui" to connect between the upper limit reached by the "Traira" and either Black R. camp or Palmer Junction camp (which ever we reach). Rand & Brass of course know nothing of all this, & I wonder whether the N.G.A. plane will drop them any notice. Anyhow this event marks the end of the Mt. Hagen part of the expedition & whether we do anything else depends on Archbold.

Sunday July 12. Unable get through to Archbold at 5.30 last night because of static. This morning motor would not start until 8 o'clk. so missed him again. Have schedule with Moresby at 11 a.m. which hops to keep. We have written

This news was quite wrong. I don't know what was paid but I guess it was about the price. The plane turned over at night & probably was flown over.

a message to the effect that we move out of here Thursday morning, commencing to relay food over to Blücher where I hope to pick up a few more mammals. We are also afraid that with the rivers mostly low the Traire will probably not be able to get up beyond Palmer Junction camp (our original landing place), even if she can go so far. Consequently we shall have to raft down to meet her.

One specimen in traps last night — a terrestrial melomys apparently the same as that at Black River. A decided scarcity of birds here. Have boys collecting insects, but can't use my light trap because of scarcity of gasoline which I need for my radio.

The day once more quite good, though some rain in night, and the Palmer range clouded over below us. Sare too is quite covered. Barometer (9 a.m.) 780 m.

The local name of the Lew is Wei Tuyaong; Surprise Creek is Wei ~~Tamar~~ Angu; Unknown river (the pseudo surprise creek) Wei Tamar.

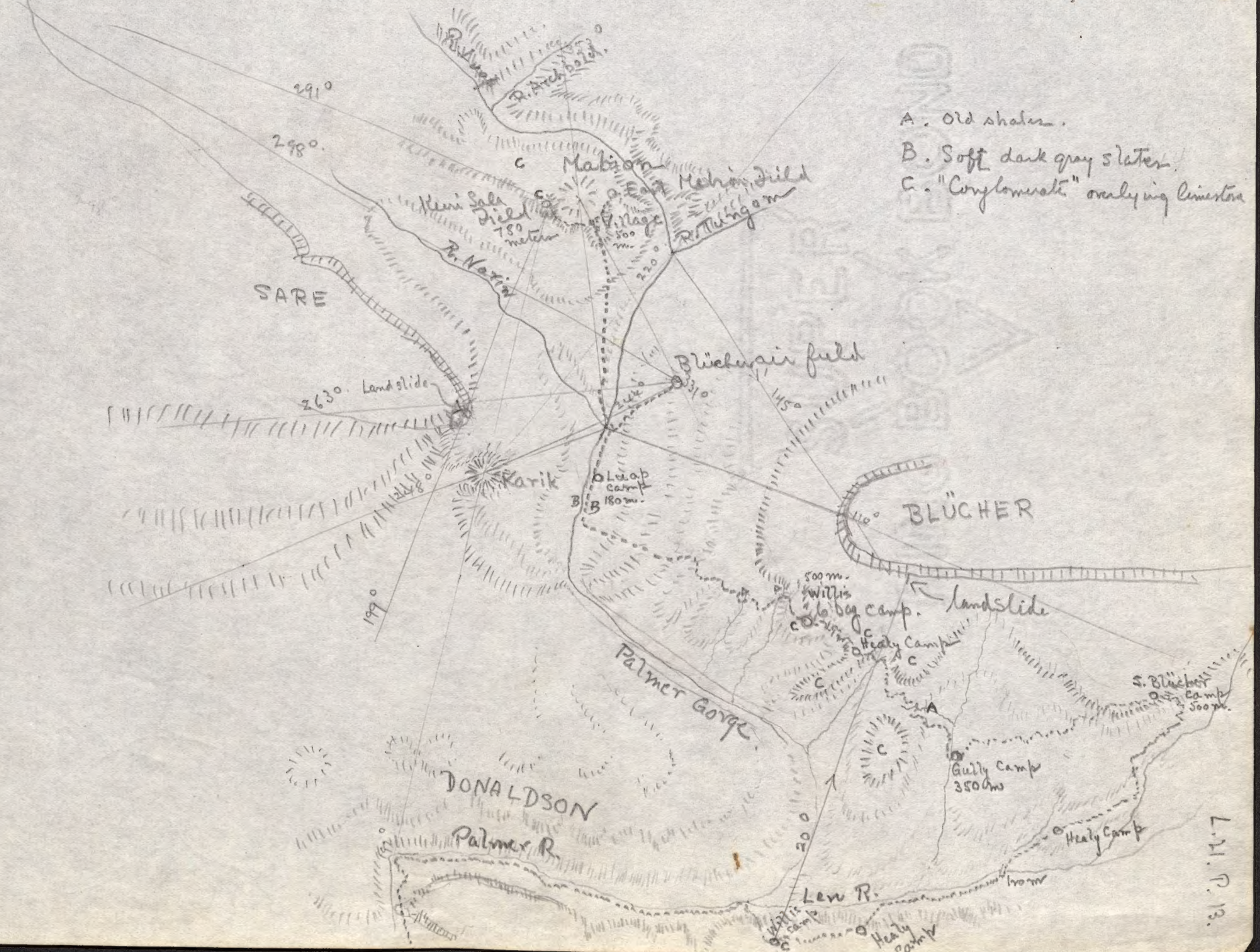
Got through to VIQ (Port) at 11 a.m. & sent message. Then made contact with Lae (the Guinea Airways station). They are to get weather from us tomorrow at 5.30 a.m. & if all well one of their planes will bring us in 1500 lbs rice. Have been mapping this p.m. Weather misty & turning now to rain. Hope it will clear before morning however.

The map on the page following is based on the combined observations of Healy Wills and myself. The bays are not corrected for magnetic deviation.

Weather going from bad to worse; afraid rainy spell setting in.

Monday, July 13. Heavy rain all night; rivers full; fog rain today. Up at 4.30 to get generator started & in steps for Lae contact. Strong morse stations interfered until 6 o'clock after which we got through without trouble. Flight postponed on account of bad weather. Will call Lae again tomorrow.

In touch Archbold 7.30; Port Moresby 8 a.m. & 11.15 a.m. Sent outline of situation & alternatives if plane unable get in on Wednesday at latest.


A. Old shales.
B. Soft dark gray slates.
C. "Conglomerate" overlying limestone
R. Archibald
Mahion
Mahion Field
Keni Sale Field 750 meters
Village 500 m.
R. Tulingam
R. Nerin
SARE
Blücherair field
Landslide
Karik
Lucap Camp 180 m.
BLÜCHER
500 m. Willis Camp
Healy Camp
landslide
Palmer Gorge
S. Blücher Camp 500 m.
Gully Camp 350 m.
DONALDSON
Palmer R.
Lew R.
Healy Camp
Willis Camp
Healy Camp
291°
298°
263°
199°
220°
245°
310°
145°
110°
200°

L.N.J. 13.

2 mile = 1 inch

4

18" = 67 miles 36" = 67 miles.

1 = 4 miles 12" = 22⅓ m.

33½ m = ½° = 8⅜" 4) 33½ / 8⅜

1 = 16¾

4 3/16

Willis's S. Sen Camp 210 m. (6.30 pm)
180 m (6.30 am)

Sen ford. 120 m (10 am)

S. Bleuler camp. { 590 m (5 pm)
500 m (6.30 am)

Gulley Camp. 350 m (11.15 am).

Ridge Crest west of Gulley Camp 500 m (noon)

Dirt Stream to Palmer. 470 m (12.30)

6 days Camp. { 510 m (4 pm).
500 m (6 pm)
500 m (6.30 am)

Mouth Marin 190 m (noon).

Begining steep slope on way up to Village 300 m (2 pm).

Village { 500 m (7.15 pm)
480 m (6.30 am).

Kori Sam (west Marin) { 780 m (9 am.)
810 m (3 pm)

Healy's S. Sen camp 190 m (6 pm)

L 21 - P 14

Opened a certain tin of candied orange-peel at lunch which was duly appreciated a vote of thanks offered to manufacturer of same!

This evening news was interesting - Dom stations: Port Moresby, Daru, Lae and ourselves working together. Dick has had trouble with his receiver at Daru. But anyhow we received his transmitted message via Port answering our "two alternatives". The plane, weather permitting, will come via Mt Hagen air field, and if unable drop rice here will drop it to Rand at Black R.

Tuesday, July 14. Started sending to Lae at 5.30, 6.00, 6.30 got OK at 6.30 but plane had just taken off. Sent message about cutting logs for rafts to Lae to re-send to Rogers in plane. Talked to Port at 8.10. Weather at Moresby said to be improving. Even here it looks a shade better. Plane will take a little more than 3 hours to get here (or to Black), and I doubt whether it will be clear enough to deliver to Trebion. In such case we must look for the rice to go to the Black. Have broadcasted to Rogers twice already & go on again in 5 minutes. Not much gas left, though.

Last night the storm reached a pitch - high wind and torrents of rain - so every stream is full. I only hope the Palmer has not overflowed the camp at Black River. Nothing in there.

Well. The plane came overhead at 10.10 and stayed for 20 minutes trying to find a way down to us. I talked to Rogers but of course don't get know whether he heard me. She has now (10.45) probably gone out to Black River to try to deliver there. The weather which was opening up a little has again closed down on us.

We learned that she got back to Lae (the plane is a tri-motored Ford) at 2.15. About 5 o'clock to our utter amazement we saw two men with a boy (all Unkia) coming up the clearing with rice

sacks on their backs. It turned out that Rogers unable to get down to the west Wabrai field had dropped 12 boys rice and 2 gallons of gas (for radio) at the east field. Rain was once more pouring down and anyway it is nearly four hours by road to get around there, so nothing could be done today except reward the three Lenkia & let them sleep for the night in the boys tent-fly. We still did not know what had happened at Black River.

Because three of one boys' feet are v. g. they would have to be carried out (6 men to each) and that leaves insufficient porters to carry the necessary amount of food. It is therefore needful to make two relays of the journey. Healy & I go out taking the radio (8 boys to carry) and all the extra equipment and food we can manage. We then send the boys in again (taking food from Black River) to get Willis and the stretcher cases some of whom it is hoped will by then be on their feet again. Meanwhile everybody at Black turns to and builds rafts. The Moraine leaves tomorrow (not two days ago as was originally promised) will meanwhile pick up Archbold & a radio set at Dare and come up the Sly River to meet us.

Wed. July 15. The storm is blowing out. Rain was moderately heavy till midnight, then only drizzle. And this morning the weather looked better & the rivers were falling. I learned from VIG (Pat) that the Ford was unable to put any message into Rand's camp at the Black. So they are still ignorant of the misfortune to the plane, & can learn nothing till we get out there in 5 or 6 days time.

We sent a party around to east Mabin to search for rice & gas. And about noon four more locals came in carrying rice. Some rice had been spoilt by last night's rain, but some must have been picked up and put under cover, for it was perfectly dry. For "wild" bushmen these Urkeia show very considerable savvy. Both Wellis & Healy say they have never come across Papuans like them. Needless to say they were well paid. Barometer (3 pm) 810 metres.

We have been sorting over equipment, choosing what may be discarded in emergency & selecting what we hope to bring out. It is not easy. I have let collecting go by the board – too busy with radio work & planning our movements. Anyhow we are on the "conglomerate" which seems no more productive of mammals here than elsewhere. But my half-formed plan to get another night or two of trapping at south Bluster camp on the limestone must now be discarded. Wellis is keeping one of my boys with him in case anything turns up in the way of mammals or birds. Have taken a scattering of insects too. But so far as such stations go this one must be labeled "wash-out".

4.15 pm. A quite astonishing thing! A long file of our boys and villagers came winding up the clearing returning from east Mabin. They had found eight more bags of rice and one of the gallons of gasoline, the latter having a small parachute attached. So the plane must have thrown out more rice than they could remember. Now, as far as we know, only the second gallon of gas is missing. Of the rice about half-dozen bags

received by rain, but the other half puts us in a much stronger position than formerly. We don't quite understand a radio in which only "12 bags were dropped" since we have apparently 14 already. The bags too are 50-lb bags. Willis says we have now recovered nearly 600 lbs of rice in good condition.

Thursday - July 16th - What a day! Up at 5.30 getting ready to go. Final communication with Port Moresby at 6.30 a.m. We had a fair night with but little rain and we left camp at 7.50. Had to make a few changes in the carriers around at Irabion village where we stopped to give everyone a spell, and where Healy and I took some bearings and also a number of photographs. Left Irabion village at 11.10 down the cliffy track, up which I had climbed with my squad of radio packers only 6 days earlier, down through the abandoned gardens to the Lucas (Palmer) River, which became because of the noise it was making we feared might be too deep to cross. After the past week's bad weather we had got reason to suspect it. The river was at least a foot higher than it was when I forded it and the place where I had crossed proved impractical. The seaplane swam the river at a relatively quiet spot and we started cutting track upstream in search of some place where a crossing might be tried. When a number of boulders showed we felled a great tree on our side. Its branches locked among the stones + held. That carried us a third of the way. Next the boys working waist deep in the swift current built out a sort of trestle bridge for another 15 feet beyond the tree. Inbudi (Willis's boy) next managed to cross with axe using a pole to hold him against the current, and fell another huge tree from the other side. There yet remained about twenty feet of water + that was finally bridged with a long slender tree-trunk. That last tree trunk was under water and we hurried to secure it with inclined forked poles.

That tree was the weakest link in the chain and took the full pressure of the stream. To beat everything rain began to fall as we were completing the fragile job & it doesn't take long before the river rises. With two thirds of the baggage was across & Healy & I went over. Then all but half a dozen pieces were over. By this time the stream was slightly + a number of our boys were chest deep in the torrent bracing the bridge. Just as the last three cargo came on the tree the trestle gave way & each half swung downstream from its respective tree. But our boys were not beaten & the strongest with poles got the weak ones with their loads (light ones) across the open gap chest-deep. I felt horribly apprehensive after the bridge span gave way that some one of them would lose his footing & be swept down stream. With that worry as well as the knowledge that we are working against time to get out & send the porters back to Willis made me feel pretty washed up. We camped half an hour later at Healy's old site a short way down river.

Checked a few bearings + find the barometer reading (8.30 pm) 2.20 meters.

What a relief to be across that river. If we had not got over this afternoon there's no saying but we'd have lost another 24 hours. As things are we are comfortably in camp on the right side + have issued an extra half ration of rice to the boys to celebrate.

Friday, July 17th A hard day. From the camp by the Sheafe (Palmer) River, which was decidedly higher this morning, + hours up to Willis's camp where the 6 bags of rice were left. Of those bags four were found spoiled while the rice in the other two was only doubtfully usable. Pushed on from there another 3½ hours which brought us down to Healy's pulley camp. Rain came on quite heavily + everyone cold soaked

and cold. Anyhow as a result of getting this far we should be able to cross the Lena tomorrow. Alex unfortunately is suffering from muscular fatigue of the shoulders. His whole neck & shoulders are stiff and painful.

Saturday, July 18. Left Gully camp at 7.20 and making really good progress reached the 500 meter south Blucher camp at 10.40. At this camp I had planned to stay for a couple of days trapping but under present circumstances we must of course push on. We got down the steep slopes to Healy's camp on the lower slopes at about 1.20, and pushed on at once down to the Lena half an hour later. The river was decidedly higher than when I crossed it going in and was discolored to a milky hue by limestone. The current was running strongly over the shallowest places and it proved advisable to make the crossing for the larger pieces of cargo at a spot where the water was deeper & quieter. It took the boys waist deep or more and the crossing was completed at 2.20. An hour later we reached Healy's south Lena camp.

On the way down the hill I once more (about the 4th time) encountered wasps; and this time in brushing them away was so unfortunate as to break my eye-glass frames at the bridge. Being able to see only imperfectly sort of put me out of action. In camp however I have managed a rough sort of repair which I hope will hold together.

Barometer (6 p.m.) 190 m.

Sunday, July 19. Left camp at 7.30 a.m. and made good progress. 8.30 Lockie's Lena camp where I stayed before, and 9.00 down to the mouth of the Lena. Pushing right on we reached the corner of the Palmer (610 mile mark) at 10.25. The Palmer was three feet higher than when I saw it before. Left again at 10.50 and arrived here at 3.55. The boys pretty tired.

Healy & I take turns at being head & tail of the procession we change at each halt as a rule. The high river of

the early part of the week had washed away many of the log bridges, a fact that delayed us somewhat. And I observed from the light of drift wood deposited up the bank how very high the water had been. We both wonder whether it went into the Black River camp, for I had been doubtful whether that camp was high enough some weeks before but Rand insisted that he didn't think the river would ever get that high.

Lined up the boys this morning before we started and redistributed the loads. They have a cute little trick as the rice in their loads gets used up of padding out their packs with blankets &c.

Barometer in the camp (Healy's on the hill) at 7 p.m. 150 meters. Shower at 6 o'clock.

Monday, July 20. Left camp 7.10 and reached Black R. at 11.35. Got across the river by 3 o'clock & left south Black R. camp at 3.20, getting in to the base at 5.55. We made excellent time, finding the gravel bar only slightly covered and some of the streams fordable which deep. At the house where I bought the pig on the way in I found nobody. The people were absent. And here Healy took the old trail through the swamp while half of our carriers took the new one. The two converged a few minutes from Black River.

We fed the boys while a raft was being built. Unfortunately one log swung suddenly & struck one of our boys in the back, and we were afraid he might be seriously injured, but he later sat up & even walked about slowly. It was thought best to leave him with another boy and a policeman to look after him until tomorrow.

From mouth Black in to our final destination the boys simple tore along. I had now 2 ½ hours travel down the Black and the Palmer. We left 4 bags of rice with the sick boy which will serve for the boys when they go in again for Willis the day after tomorrow.

We are relieved (Hoy & I) to learn that there is a full month's store of rice here; also that though the river has been very high it has not actually entered camp.

Also the little receiver has done fine service & Reed & Brass had already a very fair idea of the situation, in consequence of which they had repaired all the bridges at the camp end of the trail against our arrival.

We got in to camp in a gloriously fine afternoon which contrasted markedly with rainy mountain weather we have been having. Learned that the locals tried to raid the store & again later got away with a knife and an axe. The third time they came they ran into the string of a trap-gun (pointed up in the air of course) and after that they all cleared out. Now only the Black River people come in.

The big flood which I ~~had~~ feared might have come into camp was only a couple of inches higher than the biggest I saw before leaving for the mountains.

Tuesday, July 21. Stiff and rather lazy this morning. Rain. Getting every thing set to rights & dried out. Blue killed a large bandicoot of the genus Perorycles near camp some days ago. And there have been four bats hung up in. Sent boys out to fetch the sick boy & four sacks rice left at the

Black River. He walked most of the way in, so we hope that with rest he will quite recover. Sending back 30 boys and 2 police for Willis. They leave tomorrow.

Spent nearly 6 hours starting the motor generator. The main wireless set functions well but that compounded power supply is very finnicky. This evening at 5.15 Bruce picked up fragments of a broadcast by Archbold to the effect that the "Maira" has not turned up yet & they are having very bad weather along the coast. The "Goodwill" cannot come instead because she burns kerosene & won't have enough until the "Papuan Chief" brings a supply about July 27th. We have food here until August 15th anyway.

6. pm. Weather clearing. 10 pm. Heavy rain!

Wed. July 22. Got through to Dave and "Port" & reported arrival of ourselves, that we were sending carriers back this morning for Willis, & that we had food to last till August 15th. Port reported the "Maira" overdue. Drying boxes and packing specimens most of day.

Evening, overheard Archbold & Port Moresby: the "Maira" had just arrived. They will rig wireless on her and both Archbold and Tulstedt will leave with her on Friday. River falling again tonight. Boys have been cutting logs all day — quite a lot ready for use. 48 large logs required.

Thur. July 23. Packed boxes for Middle Fly. In touch Dave and VIG. In p.m set 10 steel traps. The boys now have about 40 logs cut for the rafts. Fairly clear day till 3 o'clock — then rain.

Fri. July 24. Overcast but no rain. Things are dead slack so far as collecting goes. The boys are all busy getting out raft timber & the white people are planning future moves. The present plan, subject to Archbold's approval is to make two stops on the way down the

river, one at the head of the mixed swamp and ridge country between the Fly R and Lake Murray (which Brass + I noted on the way up), and another somewhere near the Fairfax Group of islands. While I personally don't expect much from those stations the other two do. Anyhow it will clean up the area. From Daru which we ought to reach at the beginning of October we shall go on the "Maina" along the south coast nearly as far as the Dutch border to the Bensbach R. country and on the way back possibly stop at the Strachan Island section. That work should terminate our investigations in southern Papua.

Went out at 9 o'ck to look at some steel traps + to get another ten. Nothing in the old ones. In the afternoon Healy + I started mapping the Lerape basin + the surrounding hills. Considerable changes in existing maps will probably result. Failed to hear anything of VHW8 at 4.30 pm.

Sat. July 25. Rain early in night. Overcast this morning. I've been running my insect cone-traps ever since returning to Black Rein camp but the number of things flying seems much smaller. There are quite a few new ones however.

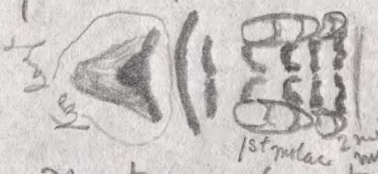
The feature of the day was the catching of Hydromys the water rat of Australia and New Guinea. Archbold did not come across it last trip and until now I had seen no trace of it, altho I had looked for foot prints in riverside mud. In a steel trap set in forest in a place where a usually dry gully is crossed by a low (1 ft high) bridge of earth and roots I had set two traps – one under the bridge + one on it. The Hydromys was caught in the upper trap. It made a low growling noise as I approached. The nearest gully with water flowing in it must be 50 yds or more away, so it looks as tho the species taken has the habit of leaving the water and penetrating up the practically dry minor gullies into the woods.

The animal was brought to camp alive + released on a cord for photographing. It was active and could make distinct short jumps. It appeared a possessor of temper and went out of its way to attack and bite sticks that were held near it. When

it was being pushed into position for the camera it usually turned & bit at the stick instead of avoiding it. In a pool in the river it first drank deeply. Then lay in the water floating quite high in it (perhaps due to quantity of air in fur); afterwards it swam strongly and dived a number of times to the bottom of the quite shallow pool in which it was first tried. In a deeper pool it refused to dive, being tired perhaps.

The external anatomy of the animal needs little noting: The head is very flat on top and the eyes small (6 mm.) from corner to corner, vibrissae long & prominent, ~~lips~~ upper lips turgid and the rostrum markedly overhanging the mouth, median cleft of upper lip pronounced and deep, rhinarium bare only between the nostrils whose openings are turned upward and backwards thus remaining above water when most of the head is submerged. Ears rather small, lacking unusual features. The fuskus of the back carries down the shoulder and outer side of forearm onto the outer dorsal side of the hand and colors the 5th digit and the base of the 4th. No webbing on fore feet (non swimming); hind feet with half web between D 2 & 3 and 3 & 4. Plantar surface with usual tuberculate surface and reduced pads. Testes very large. Tail with long dark hair, & the last 100 mm. with the hairs white. Longest digit of h. ft the 4th. Thumb of fore foot with claw approaching nail-like form.

When skinning the specimen it was found that the infraorbital branch of the Trigeminal nerve fills the large infraorbital foramen and extends forward as a number of nerve bundles to innervate the turgid upper lip region on which all the large vibrissae take their beginning. The palatal ridges are as below:



The tibia and fibula are fused; the radius and ulna free. The tail will not "pull" but must be split and skinned, except at the very tip. The two molar teeth are relatively narrow, so the species is probably esox (or perhaps beccarii or nautecius).

This afternoon Healy & I finished rough-plotting one map of the trip into the mountains. It indicates a number of minor changes in Champin's map & shows the route followed by us fairly well.

Borosh, one of my boys, brought me in a male spotted cuscus just now (6 pm). It was shot a couple of miles south of here. It is a fine specimen in excellent pelage.

Sunday - July 26. Nothing in traps today; two spring. Looking for possible Hydromys sites. The Phalanger caught yesterday is still a bit young, for it still has both milk premolar and the new permanent premolar in position in one side of the lower jaw. Learned from Tulstrup that the "Maria" is 30 miles above Madiri, has stripped some coconuts, and that Mrs Cowling (L. 16, pp 2-3) sends regards to all of us. Practically all raft logs are now cut and huge quantities of "wairo" (bush-rope, genus Calamus) or "lawyer cane" have been brought in ready for tying up the rafts. The river appears to be behaving itself and we've not had too much rain, which argues for the speedy arrival of Willis and the forty-odd boys whom he now has with him. VHW8 asked when we expected him + I said in about a week. Brass has just cut the hair of Healy and yours truly. He never cut hair before!

The following magnetic bearings taken by Healy inside the main area (the true bearing is had by adding 5° to each one): —

From Marin-Palmer gravel bar: —
Karik 248°
Mabrin 353°
Blucher 105°

From Lusp-Tungom junction: —
Karik 220°
Blucher 145°

From Ridge (Mabrin)
S. tip Blücher 143°
Karik 217°
Mabrin (N. tip) 344°
Tungom 88°
Lusp-Marin jctn 174°

From Conglom-ridge between Gully Camp and 6-boy camp:
Landslide on Blucher 80°

Air field on slope of Blucher: —
Karik 244°
E. end Sare 263°
W end Sare 7 298°
Mabrin 331
~~Mabrin~~

Koresala Camp (west Mabrin)
Karik 189°
Mabrin 122°

From Black R. Camp
E. end Sare 355°
E. end Blucher
3 peaks on Blücher 34°, 39°, 45°
E tip of west Blücher 48°

From Willis's 3 Ler Camp —
Blucher landslide 20°

This afternoon went out to look at a large burrow found by Rand. It is probably that of a large bandicoot. Dug up a lot of new traps. Some natives brought in a small pig, some sweet potatoes, and some

sago. They are the first I have seen since my return. My light meter went out of commission today.

Monday, July 27th. The river getting steadily lower; this ought definitely to help Willis. The "Maira" reports being at Alligator Island above the Fairfax group this morning. Nothing in the steel traps. Made a few new sets. Aia has cut the and fort considerably smaller. Have him painting my kit bag, and the top of the field hat I wear. The latter leaked badly under the downpours of Mt Blücher. One of my 3 pairs of boots is beginning to go too, but my third pair is yet new. I think I must have worn the pair that is giving way both ways during the mountain trip (which was a walk of about 80 miles).

This afternoon took Bororo & set two traps in the burrow of the big bandicoot referred to yesterday. Bororo showed me some other holes (apparently bandicoot) in which we shall set traps tomorrow. The d'Albertis creeper is just coming into full flower along the river and in the forest. Great festoons and garlands of blossoms colored a soft beautiful red not unlike that of the scarlet runner bean.

Tuesday July 28th. Fair all night. Lovely sunset and sunrise. A squall yesterday about 4 pm from the S.W. Made clay model of the mountains y'day.

Another bit of bad news by radio: "The Maira" is stuck with a broken crankshaft about 15 mi. above Alligator island. Archbold has sent Tulstedt back to Daru with the "Wurui" to arrange for the "Ronald S." to come up as relief ship. In a message from Rogers at Port Moresby he offered to bring in provisions by plane, suggesting the old Orville camp as a delivery site. Our food situation is such that we have provisions for 60 boys for 3 weeks and for 5 whites for 5 weeks.

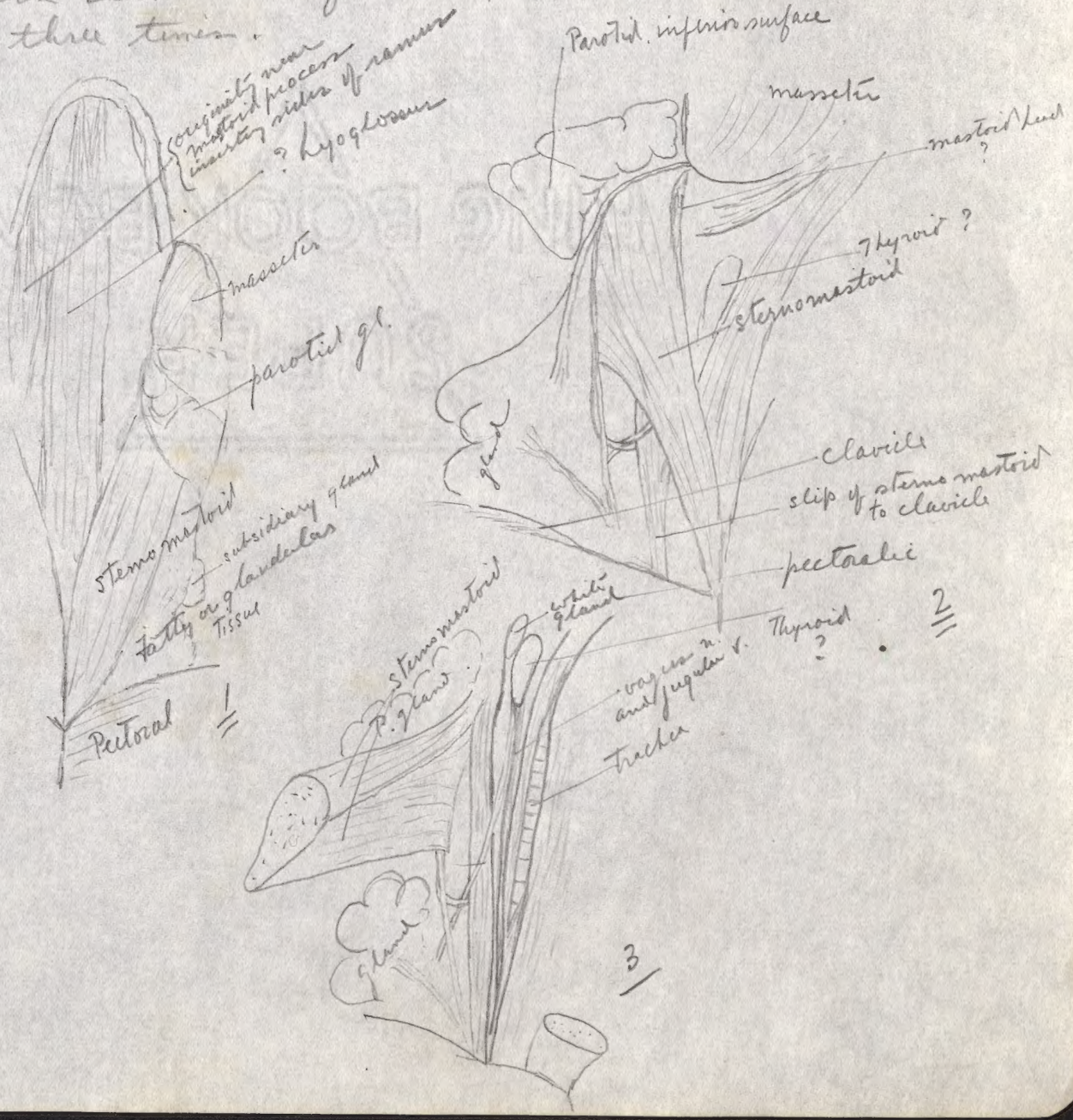
Nothing in traps. Natives brought in yet another pig today. Am getting all the photos possible of them before we clear out. Tying up of the first raft was begun this p.m. Heavy rain at night.

Wed. July 29th. Nothing but a varanid lizard in traps.

Learned that Tulstedt reached Daru last night. Want Williams Co. coming back up river, perhaps to occupy the old Orville station. Some of their stuff apparently on the "Ronald S."

That ship to recruit 5 Bamu river boys for the new comers + then apparently come up the Fly to meet us. We talking to Archbold + Nicholson on the "Maira" this morning too. No news yet of Willis but he ought to get out during the next few days. Two more rafts built today.

Thursday, July 30th. We were treated last night to the sight of large numbers (200 - 300) of great fruit bats or flying foxes streaming up river in a northeasterly direction, most of them on the opposite the camp. They flew high: from ½ to twice as high as the forest, but one of two got a bit lower. They were too high for a shot gun but Rand made a good shot + got one with his rifle. The bullet broke a wing + the bat fell at the river edge. It was killed with cyanide but proved extremely resistant. After it fell it uttered a number of loud harsh growling screams which caused one of its companions to circle over us two or three times.



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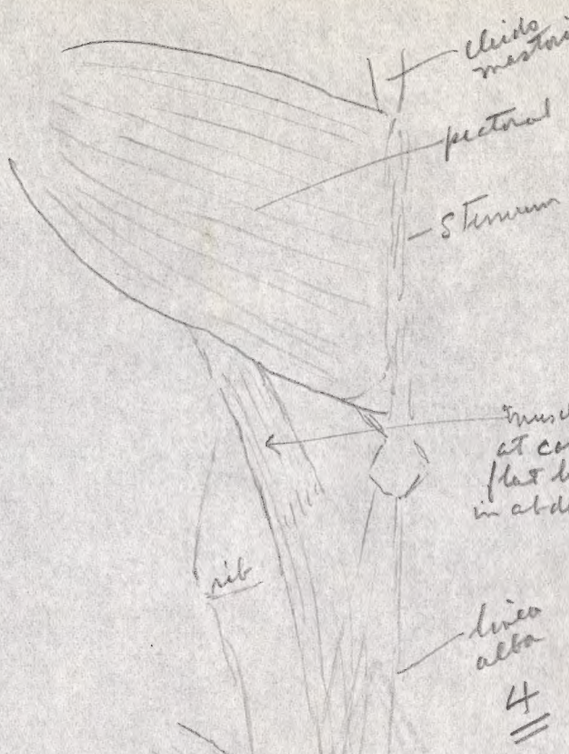

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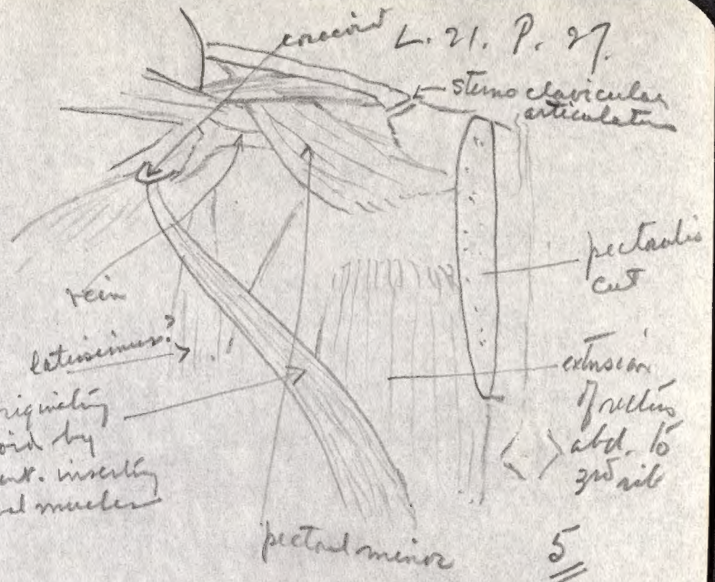

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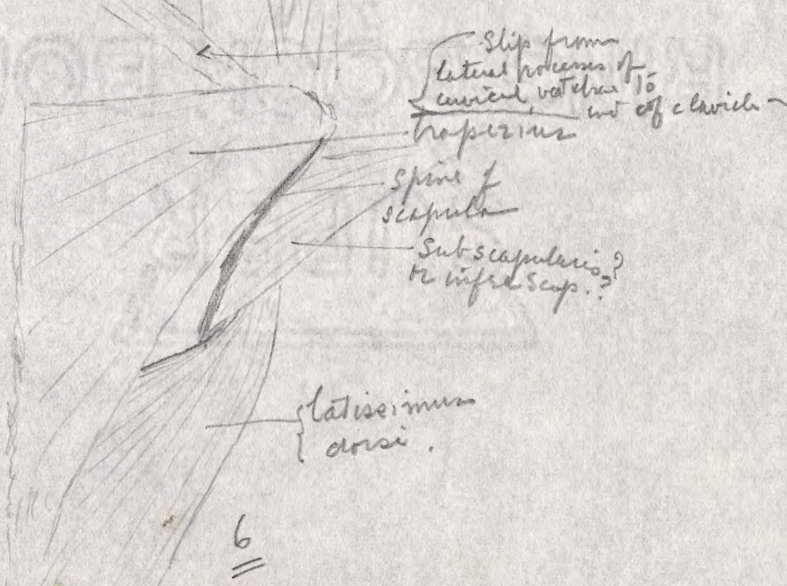

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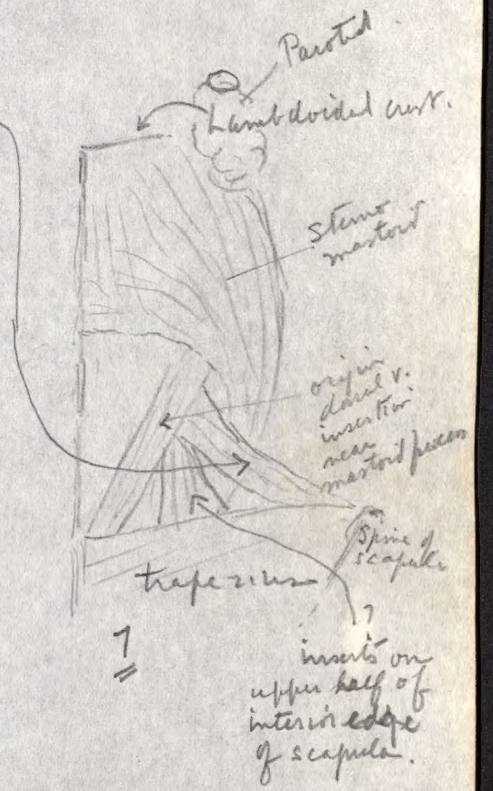

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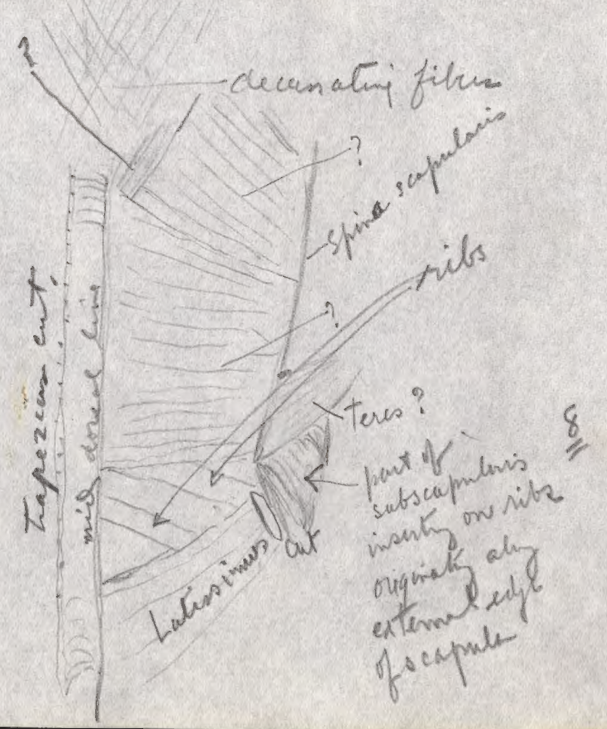

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The foregoing eight drawings give some idea of the anatomy of the animal, parts of which I dissected. The occiput and atlas are articulated so as to allow extreme forward nodding of the head. Peculiarities seem mainly restricted to the muscles of locomotion and up-side-down feeding adaptations. No thymus found. Deltoid apparently absent. Eyes shine slightly (over)

Pteropus ♂ # 2500

Tested the eyes with electric torch. The iris partly closed but the back of the eye throws back a distinct yellowish white reflection. The alar, present in Dobsonia and Nyctimene, is also to be found on the 2nd alar digit in this specimen.

Friday July 31st. Rain again last night & the river part way up again this morning. Tolstedt just back at the "Maira", according radio: arrived on the "Warri". The "Ronald S" at the Bamu recruiting boys & due to leave for up - fly tomorrow or the next day. Quickbird will come up to meet us on the "Ronald S." & go back on her, after which he is going back to the "Stalis".

One of our raft-builders brought me a living Nyctimene which I plan to photograph tomorrow.

Sat. Aug. 1st. Thunder shower last night. River up a bit (it fell down during the day). One actual Melomys which has been raiding the bags of peas in the store trapped. Set out 30 rat traps.

3.30 a raft just came around the corner with the Police sergeant and one of his men on it. They report Willis & men this side of the Black River. One boy being carried. By Jove! I'm glad to get that news. This is the eleventh day since we sent the carriers out. Sergeant says they arrived at Corisala (West Mabion) in 5½ days - the same as Healy & I, & stopped at the same camps. He had to carry one boy, the one with the sting(?) foot all the way. During the time he waited at Mabion he secured partly by Kanamoia's trapping & partly through the Unkia people a burrowing Perameles, two Echimyperas, 2 spp of Melomys a gray Phalanger, and a Phascogale; but unfortunately the skulls of all appear to have been lost. Four of the Unkia people accompanied he as far as Gully Camp on Blücher. The crossing of the Lesp was made by raft, which the police & porters made on the way up & which was again used coming out. Willis brought out nearly everything. He reached camp about 5.10 pm.

Sunday, Aug. 2nd. A juvenal ground Melomys in traps. Boys - tying up rafts still. No news of "Ronald S." Allotting stores and food for each raft.

Monday, Aug. 3rd. Completing arrangements to leave day after tomorrow. Neither Port Moresby nor the "Maira" have any word of the "Ronald S." so far.

11.30 Overhead "Ronald" working with Port & afterwards with the "Maira". She is due to reach the latter tomorrow, so she

Wellis's compass bearing taken during his trip out (magn.)

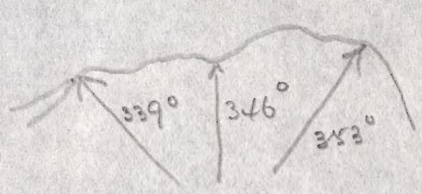
From Koisale
Karik 192°
SE end Sarl 223°
NW end Sarl 289°
Small hill (opp Blücher) 167

From Mabrin Village
Karik 220°
S. Tip Blücher 144° (?)
Tungom 89°

From Nawin Tetu proper:
Karik 239°
Mabrin 336°

Leaving camp for Blücher
Mabrin (346°) = 353°

From Lucop Camp:
Karik 245°
Mabrin →
Village 350°



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must be somewhere near Madiri this morning. If she gets away from the "Maira" the following day (Aug. 5) she will still not reach the Oroville camp under a week, I suspect.

Evening: Little news except that we have been packing and cleaning up and putting final touches on rafts. Even so when we come to test things we may find we need more. The general plan is to keep together & have a white man or a native policeman in charge of each raft. Not taken care of eleven rafts. The rest will have to be handled by labeling boys.

Tuesday, Aug. 4. The "Ronald" reached the "Maira" this morning, as I learned from a special schedule at noon. And we for our part got away with all our 12 (not 14) rafts at 8 o'clock. We traveled till 5.30, encountering one or two shallows where some rafts went aground & had to be helped off. They are heavy 4-log craft & hard to hand except in perfectly smooth straight going. About 4 torrential rain started & tonight the river is rising & rain still falling. The order of march (so far as it can be held) is Healy in lead with a fairly light raft, then Wellis, then a boys' raft, then my raft, boys raft, Brass's raft, the remaining boys' rafts & in the rear Rand's raft. Rand

has the collapsible dingy with him and from time to time it is sent down the line to the head of the column & then waits for the rear of the line. It thus acts as messenger at frequent intervals & assures us that everyone is still with us. We are tied up in a row along the bank but the place is not too good & rather exposed. I had just time after we tied up to sling together the radio receiving set & get time signals & Archbold's announcement that he was on the "Ronald S." and on the way up the river already. He will tell us his position each evening.

Wednesday Aug. 5. A tremendous flood came down river last night, the stream rising steadily for near twenty feet and increasing so in velocity that we feared pretty for our mooring lines. One line did part on one of the boys' rafts but she swung by a taut line & was re-secured.

Last night & again this morning many hundreds of fruit bats flew over us.

This morning about 10 when the river was practically at high & had overflowed the grass level of the island a pair of huge floating trees one head on, the other crosswise came around the corner and crashing through the small fringe trees into which each raft had just edged its way struck between Willis's & Healy's rafts, and striking the raft of Brass a blow that knocked it rather askew, carried off Willis's raft into the stream. An attempt was made to get a rope out to him but the boy who caught it couldn't hold it. So Willis with 3 boys on board & the dog stuck disappeared around the bend. Healy's float was driven sideways among the saplings & bushes. Brass's was smashed hard against mine. There was nothing we could do to help Willis more than send a boy with a rope in the dingy after him. That will give them a crew of four. We were pretty busy ourselves repairing snapped lines & separating the rafts which had become jammed together. Doubtless he pulled into the shore at the first chance & repaired the damage. The river is falling now (3.45 pm) & has gone down about 2 feet. By 5 o'clock the water was down to the level of the island & continued falling rapidly. We had to be constantly on the watch against getting stranded. Heard Julstrup at 6. They expect reach Everill & Smith about noon tomorrow.

Thursday Aug. 6. No excitement in the night except that a tree on the bank threatened to cave over on Brass's raft, and and enormous tree fell into the river. Water this morning 7 feet below high & we start about 8 o'clock.

Barring a few fast spots where we were nearly dragged under trees overhanging the banks all has gone well (9.30). Healy left at 7.40 & I not more than 10 minutes later. We passed the mouth of the R. Tully at 8.30 a.m. This raft, having to carry the radio, is the heaviest & strongest but at the same time the hardest to handle. We estimate its & logs as weighing nearly 2 tons each & our gross load as about 1700 lbs.

Soon after leaving (in the rain) & there was the dingy with a boy waiting in it at the spot where Willis had contrived to haul in his raft & spend the night. Later he was sent ahead with the two members of Willis's crew who had been left behind. Apparently nobody was injured where Willis on his raft was so suddenly torn from our midst by the big log; but I hope to get details tonight. At 1.30 we passed the mouth of Surprise Creek. From about 10 or 11 o'clock on the going has been excellent with few sharp corners & the river broad & deep. I caught up with Willis who reports no harm done by the tree.

It had been arranged that everybody should edge over to the right & swing in at the junction between the Sly and Palmer Rivers where a back-eddy forms but Healy in the lead wouldn't "make" it & tried to get into a place on the opposite side. A lot of us could undoubtedly have gone in but everybody followed Healy. The upshot is that bluffs are strung along the shore for miles. The heavy rafts are so unwieldy and the so large & stiff & so overhung with vegetation that about the only chance to get out of the current is to work into a back-water. That we did & with us is another with one of the police in charge.

Well in spite of being scattered, things are definitely better: the river is now too big to be dangerous; the weather has improved very much; and we are within a day & a half of the Orville's camp where everybody is to foregather.

One other thing last night just as we were going to bed: an enormous tree came down stream first and locked branches with a large snag where it hung teetering for moments & then the butt commenced to swing in towards the bank where we were all anchored. We fended it off with poles but it kept coming back. At length by tying two poles together we succeeded in getting it to swing out into the current. Even then it hung onto the snag & was still there in the morning.

Friday, Aug 7. Those enormous eddies are double-edged tools. We could not get out of ours until the second try, and a single whirl took twenty minutes. Even then it was a devilish hard pull. I had boys alternating guard last night & I set my alarm clock for every hour. Was afraid the river might fall & leave us down onto a snag where we might have stayed till Doomsday (or the next big flood). Heard Healy shoot over (the signal that he was starting out. Due to the eddy I didn't get away till nearly 7 o'clock. Found Rand just around the corner on the island along out of Palmer Camp, & Brass, Healy and the sergeant had apparently stayed there all night.

Thousands of fresh tracks across the river, — the same I went in search of back in May & couldn't find. Don't quite understand that as I'm sure I went that far up-river.

Going down the long E-W stretch (9.05) two bushmen in a canoe called "Sāco, Sāco" (? friend)

10.15. Reached upper end Macroson Island; lunched 10.30.

11.15 Swap of a dozen natives with 2 canoes on left bank. One of them called out in Motuan & it developed that he and Aremusa (our policeman) are somewhat acquainted. Anyhow the usual invitation was shouted to the bushmen to bring food to the Groville place which we shall undoubtedly reach today.

3.15 Passed large river on left, The Elevala. The bay is now at least a quarter of a mile wide and its meanders are relatively enormous. Moreover as the water is fairly high there is little danger of running onto snags. This evening, the first time I have seen the stars for weeks, we are all tied up in a row along the

sheltered (from dripping logs) side of a huge bend of the river, moored head to tail, as it were, so that we whites can step across from raft to raft. I had the crowd to supper with me on my raft.

Archbold reported good progress by the "Ronald S.", which had been traveling from 4 a.m. till nearly 6 p.m. She ought to be in the big swamps now. We ourselves expect to make Oroville in a few hours tomorrow. Several large fruit bats colonies were passed today. It was about 5 o'clock when we tied up our rafts.

Looking at the trees where fruit bats roost, most appear dead or nearly dead. Rand & I suggest that the bats kill them. How? Mechanically, by wearing away bark & foliage with the constant alighting and climbing about of many hundreds of individuals. However there are quite a lot of trees in similar condition which are not bat roosts, so there is an alternative explanation — namely that flying foxes prefer that kind of tree to roost in.

Saturday, Aug. 8. A splendid night's rest for all. No rain, no worry about rising or falling river. Set away at 7.30. The day promises to be fair and we hope to reach Oroville Camp ~~today~~ in a few hours.

The river flowed on in gigantic sweeping bends. One raft carrying boys only got mixed up with snags & overhanging vines but they cut their way out of them without trouble, being lightly loaded. We heard a shot ahead of us past the log ~~[illegible]~~ bank of the Oroville airplane clearing, now covered with second growth, five in sight. The shot meant that Heal had arrived. All rafts clung to the right bank and edged cautiously down by holding onto the vegetation, for no one wanted to be swept past. I got in about 12.30. We at once occupied every house in the camp (they are palm-roofed tropical houses).

Tonight I talked with Dick for the first time since Black River where we commenced rafting. I have been listening each night but not transmitting. The "Ronald S." ~~is 15 miles to~~ expects to reach Raggi Island (15 miles below the mouth of the Alice River) by noon tomorrow. So all's well.

Sunday. Aug. 9. Splendid night's rest. Talked to Dick on the "Ronald S." this morning - No news; they are coming steadily along; boat may stay 30 or 40 days.

Managed to get a few traps out last night. One Rattus near Mordax also a fine Melomys, the latter picked up near the house, dead on the ground. Crossed the river to the old airplane runway now smothered in grass to see if any good for "jacking"; also spread the collecting word among the "guna Kaij" (local natives).

Morning fair & pleasant; river falling; a touch of the S.E. wind.

Plenty of locals. They all know the meaning of white folk since the Orville and left only ten months ago. Also two boys of the Alice River whom we brought up with us last May on the "Maira" have doubtless told them all they knew about us. The upshot is that we have had plenty in already & they understand we want them to bring in birds & mammals. Some know even a few words of Motuan. This afternoon another Melomys (of another species) and a small Dobsonia were brought to me. I think that if I have time enough I can pick up a good collection here & perhaps fill some of the gaps.

Glorious weather all day. Took a trail to the NW. this afternoon, which is wider & relatively open: plan to go along it with a light tonight.

Have now 80 rat traps out and a good many steel traps.

Monday, Aug. 10. Started out with light last night but rain came on & I returned to camp. Archbold reports slow progress: they were still a mile below Raggi Island when we talked this morning. So they will not reach here till tomorrow.

In traps only a Rattus but the locals are bringing in material, a Melomys, a Pogonomys and this afternoon a female Phalanger. Took a walk down the river along a well-beaten track. Saw footprints of Melomys, Uromys, and bandicoot. Did not go very far either.

In afternoon more rats including two Pogonomys and a Phalanger were brought in. Just before we went in to supper a light appeared far down the river. The faint hum of engines together with the yells of the boys showed that it must be the "Ronald S.". By eight o'clock she was quite near, and in a few minutes anchored for the night. Archbold & Tulstedt with two Orville men Burke and Korn came ashore in the boat's dinghy. We palavered till late.

Tuesday Aug. 11. Unloading the "Ronald S". Our cargo had all to be taken out to get at the Orville cargo. Healy had to sign on the 25 Kiwai boys recruited by Orville at Kiwai Island at the mouth of the Fly. Plenty of mail arrived & lots of stores of which we have been short.

Wednesday, Aug. 12. A few more mammals but nothing new. Plan to leave tomorrow morning for the middle Fly - probably a few miles above Everill Junction (where the Strickland joins the Fly). Little in the way of news.

Thursday. Aug. 13. Left the Orville Camp about 7.30. The River has been falling for several days so that plenty of mud banks are showing! I fancy however that it is rising again this morning. A couple of crocodiles shot at.

The Orville people class the rock which I have called "conglomerate" in these pages as sandstone. It is however for the most part extremely soft, finely divided, and clayey.

A good sized crocodile said to be female shot & killed a few miles above the mouth of the Alice River. It was taken with the ship's dinghy to be skinned. I got a good series of pictures of it. Total length 2900.

11.30 Passed the mouth of the Alice River.

- The tribes around Orville are named Ka-wok, A-win, and Ok-a-pilake, respectively from OK Tedi, Black or Palmer, OK Mart.

It seems therefore that the tribal name of the people we had dealings with is Ā-win.

1.15–1.30 Passed Raggi Island (the "cut-off" of our trip upriver – L.16, P.8). Hauled in to the Dutch New Guinea shore about 40 miles below the mouth of the Alice about 5 o'clock. Put all the boys ashore under canvas. Willis + Tulstedt also ashore, the latter to watch the generator charging batteries. Put out 40 rat traps.

Friday, Aug. 14. 40 traps were put out last night but rather late. Nothing caught. On our way by 6.30.

7.30 Passed village on right bank. 1.30 Passed upper Dutch Mission (no missionary seen). About 3 pm passed lower Dutch Mission – went ashore there for few minutes. About 5 pm camped for night at village on Dutch shore. Set a bunch of traps.

Saturday, Aug. 15. Away soon after 6.40. The village at which we put the boys ashore consists of a dozen or more houses, a large sort of barracks-like place apparently built by the Dutch Government. There were dozens of small dogs about. Behind the village the country rises gradually and a very good bush-trail, broad & clear leads away to the west or S.W along the crest of a ridge 50 feet above the river in the direction of the R. Digul down which boats go to Merauke. Our boys brought a lot of bow-arrows.

Two Rattus in traps, ♂ + ♀, the latter with mammae 1-2=6. These rats resemble those of Orville except in the thickening of the toes of the hind feet. In both of the villages stopped at we noticed a good deal of elephantiasis & it is just possible that the condition of the feet of these rats is pathological. The rats are members of the R. rengiens group.

11.15 Passed old camp-site where Brass + I stayed on May 8th. Did not recognized place where aeroplane joined us.

2–2.30 we shot + picked up 2 males + a female Pteropus from a fat-tree where 2 or 300 were roosting. A big hawk with nest close by. Think species different from the one of Palmer-Black Region.

4.45 Passed the Wom Lagoon (= Lake Herbert Hoover). Lots of water fowl seen. Tied up for night at tip of northeast-running ridge at 5.30.

Sunday, Aug 16. One melomys taken last night. Got under way about 6.30 A.M. At 7 came level with 1st hill, first crossed & objects passing, lying about ½ mile east. Round & Cuthbert with two boys took the ship's dinghy & forced their way

through the swamp grasses towards the shore. Over to the right and quite a long way off we could see a canoe with several men in it.

8.45 (An hour out for the landing party which reports sighting of wallaby) A large lagoon far away on the right bank.

9.30 A very large lagoon several miles long far off on right bank.

Signatures of members of the expedition:

L. G. Brass, Crows Nest, via Brisbane, Queensland

Michael J. Healy c/o Government Secretary, Port Moresby.

L. Alan Willis. c/o. Burns Philp & Co Port Moresby. Papua

Emery C. Jolstedt
7040 Colonial Rd.
Brooklyn, N.Y.

Just about noon we came to a very large lagoon called Daviumbu, lying to the right of the river and containing several islands and higher land behind it. Part of the fringing hills are savanna covered, the rest in forest. On one headland there is a native village and there are three or four large coconut groves scattered about. The location is a few miles above Everill Junction. One native in canoe came to meet us as we rowed up the narrow winding reed-edged canal that joins the lagoon to the river. His name is Inamisi, and he has served in the police at Daru for 2 years. We are taking the "Ronald S" inside next (2.45) Got inside about 3.15 and cruised around until 5.30 pm

The lake is very interesting because of its unexpected nature. It contains number of islands among which we cruised for some time. Its depth varies from 9 to 30 feet over most of its area. Beautiful pink water lilies, their stalks 6 to 8 feet long are in bloom or have gone to seed. Their leaves are enormous (1 ft to 18" across). When finally we anchored for the night it was near some savanna hills which we explored roughly before sundown. They have an fauna of their own but the place is not suitable for a base camp for a month. So we shall look further tomorrow. Six of the local people came in 2 canoes to see

us. Three of them have been down to Dare, & we worked our propaganda "bring birds & animals" on them, showing them some specimens. Three of the men spoke some Motuan. Their own language is strongly gutteral.

Monday, Aug. 17. Shower last night. Today rather overcast. We crossed over to look at the north west corner of the lake, which offers fair possibilities for a central camp. About 15 Sukis came off in 2 canoes to see us, & a lively trade in bows & arrows, sago, canoe paddles &c soon developed. They are well built people, wearing large white shells, strings of cowries, loin-cloth, armlets & anklets, and have their plaited with grass into numerous tassels. (See photos). We are cruising about the south end of the lake at this moment, giving seven of the Sukis a free ride in the two dinghys trailing astern of us. L.23.P1

We finally settled on a corner of the lake to the north west. Baggage, equipment, tents, &c. were landed by means of the two boats and the whole mob of four boys was soon at work making a good big clearing under the shade of trees and erecting shelters. A fair number of Sukis came to visit for us & did a little carrying between the boat-landing and the newly made store. Several have visited Dare and speak some Motuan so we quickly let them understand that we wanted mammals & birds. By sundown the place was in very fair order.

Tuesday, Aug. 18. This morning the finishing touches were put on the camp; the radio went up. And about 3 o'clock the "Ronald S." sailed with Archbold, Willis and Tulstedt on her, leaving Healy, Briers, Rand and me with six police and about 18 boys to work the lake. Had no traps out last night. Set out quite a lot today, but pretty busy this p.m. getting organized.

About 6 o'clock lots of small bats – probably Emballonura – whizzing about among tree tops.

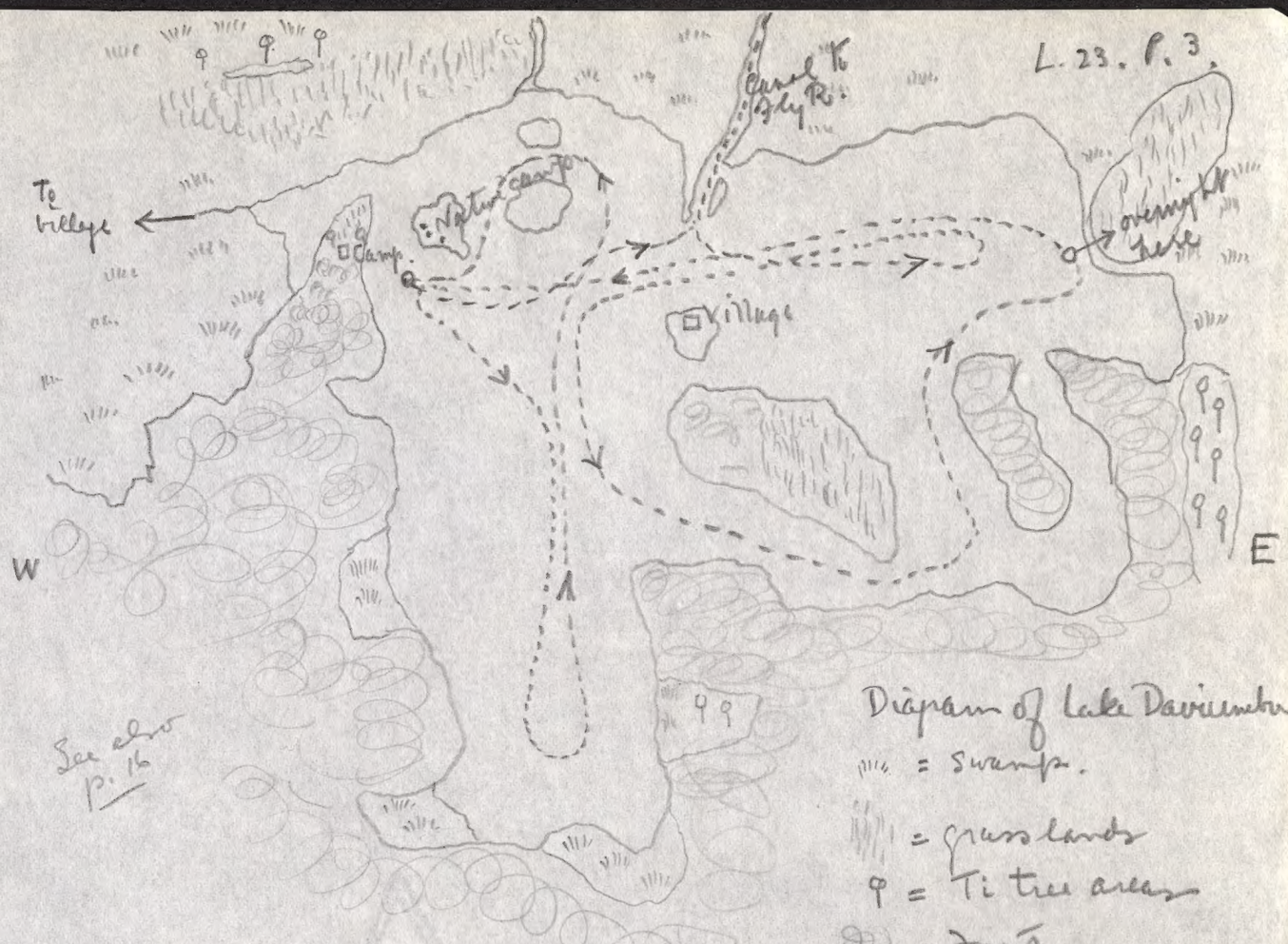
Wednesday, Aug. 19. Mosquitos (non-malarial) were a nuisance in the evening. Night clear. Morning temperature down to 71°. Plan to keep a barometric record here. A Melomys muscalis in traps and two others brought in by Sakeis. A Phascogale (3 dorsal stripes) shot by Ego-ego (bird boy). This animal represents one of the subgenera recently distinguished by Stein. It looks like a Tupaia & has a long pointed nose. The boy got it on the ground but one of our police says it climbs trees & that a number live in a single nest. A Uromys brought in in the afternoon.

Thursday, Aug 20. Today two spp of Melomys the grass-inhabiting muscalis and the forest terrestrial one of the north; Rattus brachyphiurus, and an exceeding interesting, possibly new bandicoot. It is very small (field # 2558) and is not adult. The milk premolar (?) presents unusual characters and in the skin the tail is long & the ears large with the margin of each inside covered with pale brown hairs. In the fore foot the 4th digit is long (comp. Echimypera). The tail is fairly but densely hairy. The rostrum long & slender. Is it new or a young Isoodon. The ears are large and rather pointed but broad near the head. Sent the boys out with guns and some steel traps. Also made more sets for R. brachyphiurus. Baited my steel traps south of camp with bananas to try to get Isoodon. Have had strong breeze all day — sufficient to make little white-caps on the lake.

The climate here is very dry, yet at the same time there are quantities of mosquitos. Camp is situated on a sort of peninsula with water on either side of us, and a scattering of trees give shade. North the trees give place to savanna & clumps of bamboo; south to a dry phase of forest which is comparatively open and contains little or no Calamus.

The lake is extensive, a couple of miles either way, pretty indented and contains many islands, some of them quite large.

The Sakeis have built a new camp on one of the islands, importing their families. Probably they will do some hunting for us later on.



See also P. 16

Diagram of Lake Daviemba

= Swamp.

= grasslands

= Ti tree areas

= Forest.

---- = Course taken by the "Ronald S"

From W to E is probably 3 miles

The lake is of fairly uniform depth except near its shores - from 9 to 12 feet.

Friday, Aug. 21. 1936. Fair night. Went Jacking with light last night. No luck. This morning took Aia and the dingy and we crossed to the savanna north of here and went over to the Tea-tree savanna looking for wallaby. Plenty of tracks & dancing places but no animals heard or seen. The grass very high.

In traps 3 spp of Melomys and a Rattus brachyphonus.

Healy went in a native canoe with one of his police to visit the village west of here. He says it is rather a poor example of its kind - about 10 houses. He brought back a couple of Melomys mescalis. About 6 a whole troupe of Sukis came in with 11 Phalanger maculatus which they had caught somewhere near the river. They had skinned & so we have no skulls for those.

Sat. Aug 22. Traps yielded 2 small Melomys and a small from Phascogale like that of Palmer Junction (L. 17, P. 14) Every why busy skinning the Phalangers brought in last night. High winds every morning now. Archbold & party reached Darw at 2.a.m.

With the eleven cuscuses brought in last night were two young ones alive + active. Tried feeding them condensed milk + banana this morning but had to put the food in their mouths. The male has just the beginning of the ultimate spotted colorat. Its ears are yellowish and the base of the tail is buff. (photographed them). Then we have a baby Snore-pork (a big sort of night hawk) and a fully-grown though perfectly tame fish-eagle. The Sakis are busy cleaning up camp for us. The cuscuses I paid for with pocket knives.

This afternoon set out another 3 dozen rat traps.

As I see the workings of the climate of this part of the country, the SE trade, though laden with moisture from the south Pacific, is a cool wind; and reaching the lowlands of the Sly R region its water carrying capacity is increased by mixture with the warm air rising from the forests + savannas. Consequently it passes inland towards the mountains without releasing rain. However as it gets some hundreds of miles inland not only ~~has~~ its temperature rises and its water content increased but it now travels so high above the top of the forest that tree tops are practically undisturbed by it. Also occasionally it is driven high enough to cause some precipitation. On reaching the mountains however it is forced so high that most of its load of moisture is dropped. The "north west" is a hot wet wind from the Indian Ocean which gives heavy rains and frequent thunderstorms. It is not a trade wind nor do I understand it yet but it may be an eddy wind from the NE trade. The peculiarly rainy climate at Hikori in the Gulf may have something ~~to~~ to do with the Lemerd Plurrey volcanic + the Turama limestone area west of there.

Sunday, Aug. 23. Another big wad of cuscuses was brought in this morning. In traps a third sp. of Phascogale, a juvenal Rattus + a juvenal Melomys mus celis. Tried a new bait: rice mixed with honey. Have it in half the line. A bandicoot adult but similar to the young one taken Aug. 20th in Rat trap set in grassy area.

Monday, Aug. 24. No particular news. The traps yielded a Cremyx and a Rattus brachyrhinus ♀. Tried a new bait on half the line yesterday – nice with a little honey mixed with it – but caught nothing on the half of the trapline in which it was tried out. Went back to old style of bait. Made a bat-swatter by splitting out the one end of a bamboo & tying it out flat. Got in 4 or 5 swats at one at dusk but did not hit him.

Out "jacking" but didn't see an eye. Heard something once but couldn't see it. Plenty of spider's eyes and saw a couple of sphinx moths flying, their eyes glowing ruby red. Far out in the lake there was a great splashing whilst for a few moments – either a large fish or a small alligator.

About 6 o'clock Healy & I were sitting on the little wharf where we tie up the dingly & came watching the colors of the sunset in the water. Suddenly a large drop of water – about a teaspoonful shot 4 or 5 feet into the air & fell back. This was repeated 8 or a dozen times, just as though a sharp jet from a water-pistol had been released. It was done by the rifle-fish – a small fish which knocks down small insects by ejecting drops of water at them from its mouth in the way described.

Besides the creatures mentioned earlier we have three baby cassowaries here – little chicken-like birds with longitudinal stripes down their backs, and practically no wings. They run after everybody whom they think may have a little food for them & are liable to eat leaves or cotton wool, or almost anything.

Tues. Aug. 25. Two different arboreal Melomys and a R. brachyrhinus. The queens of green ants have been swarming to day. Collected a few. This afternoon the Sukis burned off the grass of an island near by, probably to drive out bandicoots & rats. In fact I half expect a few singed specimens to be brought in later in the day. Also Wolea, one of Rand's boys got me a fine large male

Cuscus. We (Rand, Healy + I) took the big dingy + rowed around the burning island but saw only a few Torres Strait Pigeons, a probed-billed cuckoo and one hawk. — no mammals.

Wed. Aug 26. Heavy shower about midnight. Humidity was saturation early this a.m. In traps 2 spp of animal helmys and a Hydromys. The H is a very small one, apparently nearly adult, or at least in adult pelage + with its teeth developed but scarcely worn. It may turn out to be a smaller species.

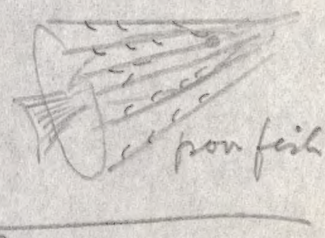
The bandicoot I have been getting here is Isoodon, but decidedly smaller in size than the one Dick got about Oriomo. It may be new.

The other day Healy + I went over to the camp on the bamboo island. The natives have made numerous little shelters + inclosures where the various families live. The women often wear hoods made of bark or fiber, which rest on their heads + hang cape-like down their backs. There are swarms of dogs there. We thought they might eat the dogs, but they declare they keep them for fighting alligators. One have small pig in a hutch. Several of the men conducted us through the camp, kicking dogs + bundles of firewood right + left to make way. Saw two or three litters of pups. Took a few pictures but it was late, + the light now too poor.

One bandicoot resulted from the fire. It was in good condition.

Native fish traps are basket work cones, the ribs of which are of lawyer cane + have the spines all set inwards; the fish swimming inside to get bait can't get out because the spines hook under their scales.

Developed photos last night.



Another lot of people arrived last evening. They have been away making sago in the forest. They brought us bananas + sweet potatoes. Dick Healy got a pot or catalery yesterday. It seems they have words for one + two only: when they want to say three or four they say two-one + two-two. What they do for 5 or 6 was a puzzle to me but they put me to fright out.

Wed. 26 Aug. ~~[illegible]~~ The outstanding event of today was the big wallaby hunt. About 50 Sukis with we four whites + some police took part. About 50 or 100 acres of grassland were burned over. The grass is all interlaced with swamps so the game for the most part just walked into the water + waited for the fire to go by. However four macropus agilis (the form of wallaby with the ears black-tipped) - also seven bandicoots (Bordon) and a few rare Melomys were taken. They were all in good condition. It was all very exciting. The flames roared along and the Sukis were spread widely all about the area with their bows + arrows "at the ready", keenly watching to see what might break cover.

Thursday, Aug 27. This morning everybody very busy taking care of the catch made yesterday. In the traps this a.m. another Hydromys, a M. musseolis and a young terrestrial foot Melomys. This Hydromys was trapped along a trickle of water that goes down a nearly dry stream bed to the lake. The first one was caught in swamp grass.

Mick Healy went over to the burned patch + got yet another wallaby this afternoon. He came back, as yesterday we all did, as black as the ace of spades.

~~Last da~~ At night the Sukis threw a dance. We went over + watched for a couple of hours. It was strictly a Stag affair, + mostly consisted of one hell of a din. About 30 men + boys took part. Each one had improvised a drum out of sections of bamboo and tin cans &c. & they persp-forted to + fro with a knee + ankle flexure which they chanted three or four bars over + over + over. In the flight of the bare men + a couple of Torches there under the bamboos the scene looked wild

indeed. Betelnut was being chewed freely. When they finally got to the end of a chant. They would pause for a moment or two till somebody struck up another. Just as at a party at home we could tell they were discussing which particular opera they should put on next. I shot a few pictures with the hope that a little something may come out on them.

One tiny lad (about 7 years I should think) was brought by his dad. He soon grew very tired & sat down in the midst of the dance floor. Finally pa squatted down too & gave him a drag of the cigaret he was smoking. As that didn't work the two left the party. An occasional dog would wind its way among the ceaselessly moving feet. Tamoose (the chief who met us the first day) got seats for us (bits of firewood).

When we came back to camp found that a bandicoot had been caught in a trap near the cookhouse.

Friday Aug. 28. In traps yet another Hydromys and at Rattus brachyrhinus. The H. was taken in Sago swamp. No special news late.

Saturday, Aug. 29. Message from Rogers to say that the "Rowed S." will not be here till about the first of October.

In traps 3 Rattus brachyrhinus, 1 Melomys muscalis, and 1 arboreal Melomys. Photos of native dance the other night n. g. - not enough light. In p. m. a Macropus brunii (scrub wallaby) was brought in, shot by one of Healy's police.

Sun. Aug. 30. Got some quite nice lepidoptera this morning. Nothing in traps. 3 Saroma wallabies brought in in the evening.

Mon. Aug 31. This morning weather overcast & a high barometer. One large arboreal Melomys only in traps. Boys working on the 3 wallabies all morning. The flies & mosquitos are such a nuisance in this camp that we have made a screened dining & writing room out of a net skinning tent I had made in Moresby. I think it will work quite well too.

In the big wallaby hunt of the 26th a young one not very long out of the pouch was picked up quite unhurt among the water passes where it had avoided the fire. It was dripping wet. When it was brought to camp I shut it up for the night in a kerosene box. Next day with a rope collar and a short cord it was tethered out for 15 minutes. It threw itself wildly about & became very exhausted but soon lapped a few drops of water. It was then returned to the box. Next day it jumped around once more but at once accepted water in a tin. That night it was tethered out to a stake & the box (with which it was now familiar) was left for a hiding place & shelter. At night under the light of a flash light I saw it feeding on young shoots of the broad bladed grass that grows all over the clearing. I have been handling it frequently every day & it has gradually ceased to kick & fight & try to bite (it can undoubtedly bite hard). It drinks water freely now. Today I saw that it had dug up the earth of a roughly circular area about 1½ feet across & made of the place a sort of form where by day it lies out sunning itself. In fact it lay out flat and dozed, & showed so little concern when people came near it that I feared it was ill. It comes to life (so to say) about 5 o'clock when the sun gets low, & eats grass and fine roots & little bits of straw. If a little bit alarmed it now runs & sits on its form instead of bolting into its box as formerly. I'm calling it Mack (Macropus). It no longer leaps wildly at the end of its string, nearly breaking its neck each time. I fancy it would make a good lawn mower.

Tuesday. Sept. 1. Barometer still high. Weather fair. Only two mammals in traps - a young Dasyurus and a Melomys muscalis. Archbold reports that they are now in Port Romilly, + leaving today.

The soil in this region seems to consist a sort of surface hard-pan with laterite pebbles scattered over it. Underneath there is a subsoil of stiff clay, a mixture of rather large particles of red + gray clays. At the camp site that clay goes down for at least 6 feet (sample). Even in the woods the laterite is plentiful.

I'm curious about this lake. Its uniformity of depth and its scattering of islands is hard to account for. Perhaps it represents ~~a~~ old river bed - or again it may have been ridgy country which was warped downward + had its low parts drowned by water from the Fly R. Lake Murray gives the appearance of such an origin, only in its case there are at least two good-sized rivers flowing into it and it has an outlet to the Strickland River.

In the afternoon I took two of the boys to put out 100 traps over on the burnt savanna area where we had to kangaroo hunt. 70 were set at the margin of the burnt grass and the swamp; and 30 on the slightly higher ground forming the ridge - perhaps 3 feet above swamp level.

Wednesday, Sep. 2. In Aria's forest line which was partly changed yesterday nothing. In the new line in the burnt area seen: 1 Phascogale, 6 Rattus brachyshenus, 1 Melomys muscalis. Only two, a R. brachyshenus and the Melomys, were taken up on the dry ridge. This is about the best catch I've had in Papua, the proportion of catch to total traps being 7 %.

The pouch of the Phascogale can be seen distinctly to pen forwards. No young in it.

Rand found about a dozen Emballonura nigrescens among low palms and shot two. They were only 6 or 8 feet from the ground when first flushed but flew up into the top of a palm + hung under a frond.

Thur. Sep. 3. Seven mammals but nothing new today. Rain last night & barometer again high.

The young wallaby seems to be growing. When scared she makes a noise like a sort of whispered cough. She scratches with the syndactylous toes of the hind foot. She has made a second form. When she drinks she laps like a dog or a cat. She occasionally sits with her tail right under her and pointing forwards, thus sitting with the dorsal surface of the tail on the ground.

After skinning took the big dinghy + my 4 boys + rowed down to the SW corner of the lake. About an hour each way. Mixture of forest, ti-tree swamp + reed swamp. May try traps there later on. Three bandicoots brought in by locals after lunch.

Friday Sept 4. Archbold on radio said they were due in Moresby at 5 o'clock tonight so in the next day or two we ought to learn something definite about the future. Rain last night, not heavy though.

In traps across the burnt area: one Rattus brachyurus and two Phascogale ♂ + ♀. They were trapped, as was the previous one along the junction of swamp with the burned area. Am moving traps over there, as I want much like to get a good series of them.

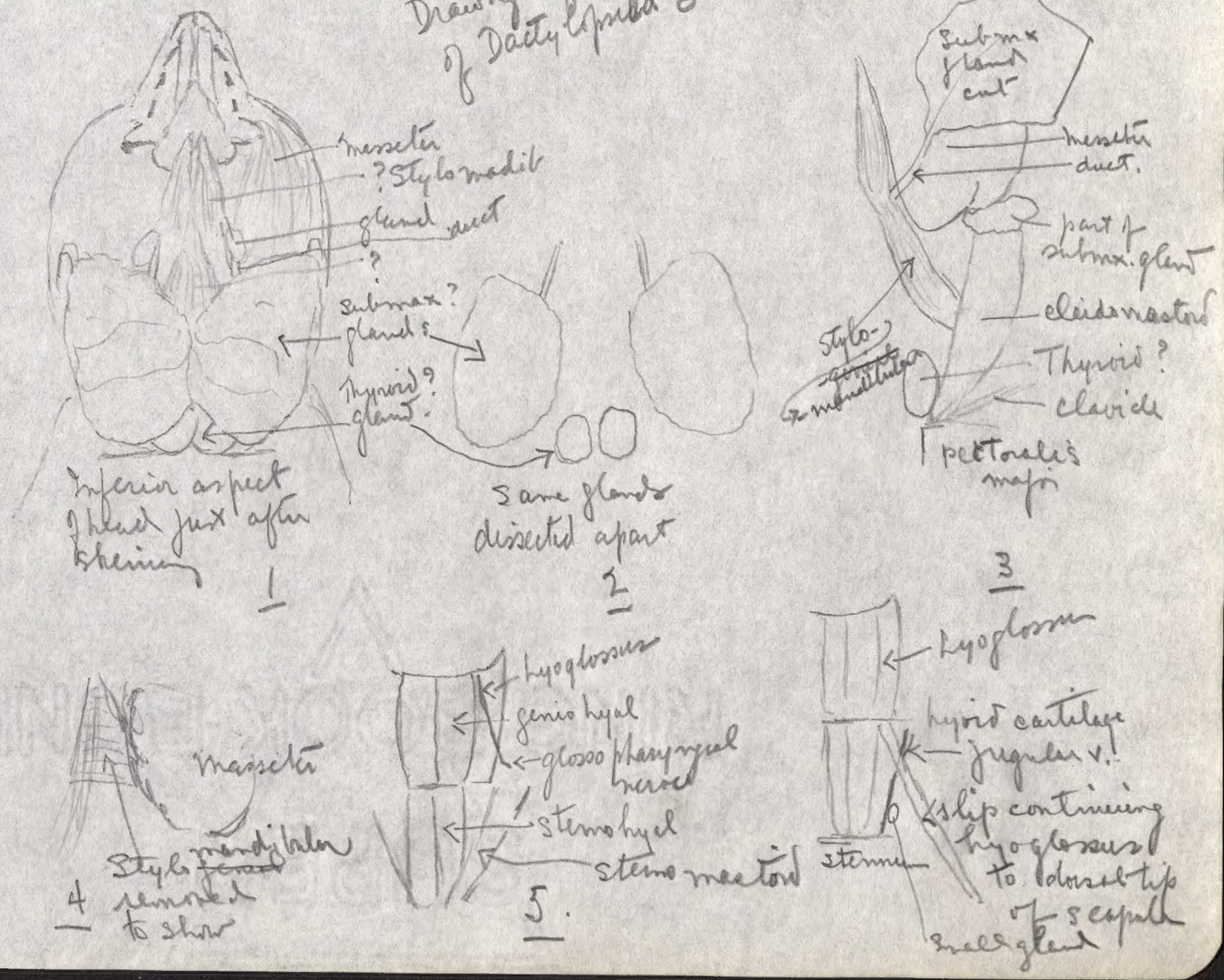
P.M. Have now 227 set traps over the burnt area + reaching along the edge of the swampy unburnt parts. Hope for quite a large catch.

Sat., Sept. 5. A good catch from across the water to N.E.: 5 Phascogales + 4 Rattus brachyurus. The phascogales comprised 2 ♂ + 3 ♀. Of the latter one was young; another was well developed + the pouch contained 6 mammae; the third had 6 pouch young — i.e. the full complement, for it also had only 6 mammae. 6 is apparently the specific number for this species. There is no unpaired central mamma as with Marmosa.

Two of Bass's boys cut a savanna Mimosa for fire-wood + found at the top of a long hollow cavity which opened at the bottom, an animal allied to Dactylopsila

or more probably a member of that genus. The specimen (male) is small compared to most D. I have seen and has several characters not noted by me before: The 4th finger of the hand is relatively short, the digits measuring respectively 7, 11, 14, 20, and 11 mm. to the web; the terminal 25 mm. of the tail beneath is prehensile. This shows not only in the cross folds of the tail skin but when bright it the animal was still alive and crooked the tip of the tail around my finger. The pattern, + the narrowness of the tail ~~tail~~ ~~conf~~ conform with my recollections of D. t. katani from Oriomo. I could not make the eyes shine with my flash light. A peculiar tubercle containing bone or cartilage at the base of each hand. Whiskers clipped short, + some with gummy substance on them. Tongue greatly protrusible.

Drawing of musculature of Dactylopsila ♂.

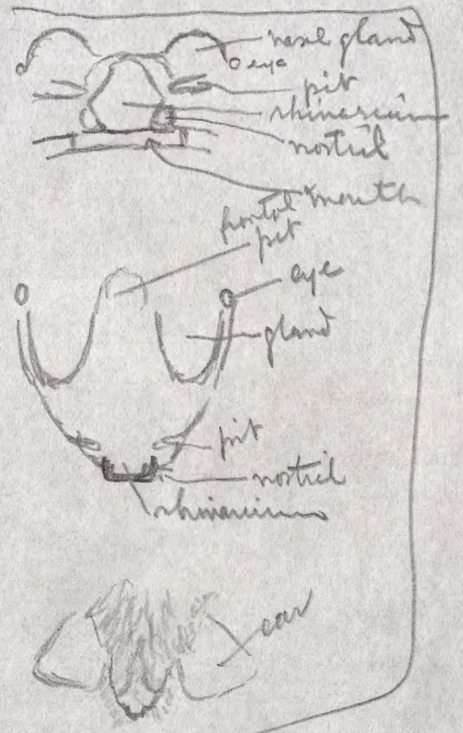


Of the muscles shown in the sketches on the previous page the outstandingly peculiar one is the extension slip of the hyo-glossus backwards and upwards beneath the cleidomastoid to insert on the dorsal angle of the scapula. This slip (one on each side) draws first hyoid and then the tongue backwards, and is probably directly related to the extensile tongue.

Sent the boys out to relait this p.m. and gave them 58 additional traps (more traps especially) for the small Phascogale.

Just at six o'clock several locals were watching Rand sketch the head of a cassowary. Suddenly there was a gabbling of unintelligible talk over at the store, & every bushman slipped out of camp to the canoes like a flash. It turned out that a strange canoe had been sighted at the other end of the lake. Ten minutes later they were back again; the canoe turned out to be one of their own after all.

Sun. Sep. 6.



X4

The weird-looking sketches opposite are intended to represent front and top views of a Vespertilionide bat found this morning by Brass in a leaf some 6 feet above the ground. It reminds me most of Kerivoula. The tragus is long, narrow, pointed; the rhinarium small but prominent; the nasal glands very large & orange yellow in color. There is a large frontal pit between them.

The little Phascogale of which we've been getting quite a series lately seems definitely to inhabit the edge of the swamp, at least here.

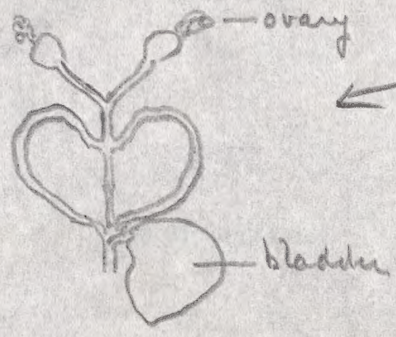
Took pictures of a lot of the locals this a.m. One group with about 40 of them in it. A lot of singles + some small groups.

A young ♂ Cuscus this morning.

The "Sukis" were painted & decorating themselves with white, yellow & red paint this pm preparatory to dancing tonight. Their dancing consists walking about with the knees slightly bent to the time of drums & chanting. I'm not going on tonight but will note down some of their chants.

(later). Got a whole lot of dance chants. They consist of a couple of bars endlessly repeated.

Mon. Sept. 7. 4 Phascogale, 4 R. hacheyrkinus, 1 Melomys muscalis, & 1 Isoodon were taken in traps.



sketch of reproductive tract of Phascogale.

The second female Ph. had six young of quite large size. (photographed).

Tuesday, Sep. 8. Traps yielded 6 mammals - 4 Phascogale, 1 Rattus, 1 Isoodon. In p.m. one of the boys brought in a ♀ Phalanger with one young one in pouch. After the adult had been skinned I dissected the neck muscles to see whether the hypo-scapular muscle which I found in Dactylopsila was present. I found it easily, though not so strongly developed as in that genus.

Wed. Sept. 9. Quite heavy rain during night, and a shower just at dawn. Only 4 mammals in traps many of which had been snapped by the rain — Phascogale, 2 Rattus hacheyrkinus, 1 Melomys muscalis.

This afternoon busy patching up holes in a canoe preparatory to putting an outrigger on it so as to be able to paddle safely all round the lake.

Thur. Sep. 10. Five small mammals in traps; left of Wallabies & a Cuscus brought in by boys. Wind in early a.m. west, and must right down on the

water. The SE wind soon prevailed however & the weather cleared. Heavy shower in mid-afternoon & light rain into the evening.

Fri. Sep. 11. Fair. The little wallaby which I wrote about earlier died this morning of unknown causes. In traps 2 Phascogale, 4 Rattus, 3 Melomys muscalis.

The canoe is getting its out-rigger put on this morning, so probably we'll change traps line tomorrow. The out-rigger is quite ingeniously devised (see photo.) and a light deck has been built over the canoe which gives ample space for stretching out if one wants to do so. Just reached my 200th mammal for this camp today.

The recent rains have had their effect on the forest: many trees are covered with new pink foliage (leaves in the tropics often are pink when first expanding), and more and different insects are coming to the light at night. The rain cannot have been general however, as the lake level, which is that of the river continues to fall. It is about 3 feet ~~below~~ lower than when we arrived 23 days ago.

Picked up some butterflies in p.m.

Sat., Sept. 12. Picking up traps this morning for transfer on new canoe to NW end of lake. Boys only get back from the job at 10 o'clock. Report that lake has risen 6" & many traps were submerged. Catch 1 Melomys muscalis, 1 Phascogale, and 1 female Hydromys. I'm especially pleased to get the last, as it gives me the mammary formula for the species (0-2=4).

Had just finished measuring the above when "Uncle" (one of the Sukis) came in with another Hydromys (♂) killed by the dogs on their island. It lacks a hind foot but is otherwise ok.

After an early lunch we (the 4 boys + I) started out in our outrigger canoe with 200 traps on board for the SW bay of Lake Daviumbu. Setting proved rather slow & good places hard to find. So, as I had to get back at 5 for radio, I got only 150 traps out. We came back thru the usual afternoon squall.

Sunday, Sept. 13. Fair. Have radio with Orville this morning & also with Rockhold. As might have been expected when traps were moved into forest, the catch fell off to two specimens: a terrestrial Melomys and a second species of the same genus. Bill shot a half-grown cassowary.

Failed to raise Orville & got no news from Archer.

Rand is going west through the swamps for a few miles & will stop for several days. Brass goes for one night only. Do not consider it worth while to go down there myself but am sending one of my boys with 50 traps for a few days.

Monday, Sep. 14. Only one specimen from traps: Rattus rufescens the forest rat which though I felt sure it must be here I had not yet taken. It had had all its "innards" devoured by some predator (probably a Kite). Brass & Rand had left when I got back, so sent my boy on by extra boat (with two left behind by Rand). Rand & Brass with their tents & gear went in two big canoes each paddled by seven or eight Sukis. Healy & I are "holding the fort" here.

I now redraw my plan of the lake (at least the western end, see p. 3, this letter).

It got looking more & more raining. About 4 o'clock the rain began & the wind shifted to the west. We had a regular down pour till 5 or so.

Tues. Sep. 15. Heavy Rain most of the night. The lake up a foot more & rising still. Sorry for Brass & Rand out on the savanna. Their quarters are pretty cramped & they won't be able to do a thing. This morning it is still raining. Looks as though there would be an early shift of seasons to NW this year. Yet it is almost equinox, so why not.

Radio tonight (8 pm). Hardly afraid he will be detained to Orville Camp after he finishes with us. The Ronald S sails on Saturday (19th). Thursday afternoon all details to be settled up with Archbold.

Brass back tonight. Reports the place where Rand is as flat, low, sour soil - rather swampy. He got a lot of seed plants but Rand nothing much in birds. Hanemann found nothing in the mouse traps, but then the rain spoiled things any way.

In the traps here a young Urubitinga.

Wed. Sep. 16. Last night after midnight heard a steady peep-peep-peep down by the boys' quarters. Thought it might be the surviving baby cassowary in trouble. Instead found that the noise came from a small tree & located a pair of eyes. The eyes vanished as a freak - but took flight, soon to resettle in a tall tree. It appeared to crawl on top of the leaves & but I saw its eyes & brought it down. Also some of the tree. This morning shows it to be a small species of Pteropus and the tree to be Xanthostemon (Myrtaceae) in flower. The flowers are small & thick, clustered closely & I am pretty sure the bat was feeding upon the flowers.

Heavy rain in the evening. Starlight when I went out after the bat. Overcast this morning.

Took Sorrow & Aia with 150 traps & went back once more to the savanna. The only good part of it is the edge of the water where there is a definite drainage. The center which

formerly was the driest part is now very wet & boggy on account of the lack of run-off.

Healy went by canoe to pay a visit to Rand this morning. When the Suki canoemen came back they had about a dozen old dried skins of wallabies, not savanna but scrub wallabies, and the curious thing is that most of the skins had skulls in them, the skulls apparently cleaned of their meat by ants or dermestes. I bought the lot - 2 sticks of tobacco for those with skulls, one for a skin lacking a skull. - On sorting them over things turn out to be even better. The series contains six Dorcopsis and five Macropus bunii, close mimics. To compensate for getting Dorcopsis (new to the collection) the skulls are mis-matched, so all skulls & all skins will have to be treated as representing separate individuals.

Thur. Sep. 17. Last night we had quite a disturbance. At nearly 10 o'clock one of our boys came to say that a Sukki woman had been bitten by a death-adder, but that the snake had bitten two dogs first. The dogs were already dead; and they were bringing the woman over for us to look at. Well we got out the snake-bite outfit and antiseptics &c. in readiness. When they came we saw an old woman supported on either side by a bushman, & about ten other men following behind. She was covered from head to foot with wood-ashes, whether for pleasure (before being bitten) or as a "cure" I couldn't learn. She had been bitten along the inside face (adjoining the next finger) of the index finger of the left hand. Punctures were barely visible but the back of the hand was a bit swollen. I opened the finger with a half inch slit, one each bite, & parallel to the artery (not taking a tough skin!). & blood flowed fairly freely. Then rubbed in permanganate crystals. Next we gave her a good shot of rum to stimulate her. Her pulse remained quite strong and only a bit slow. ~~The~~ The ligature which

we (Bruce + I) had put on directly she came had been released once & when we retighted it we told the men to walk her up + down a bit. They walked her alright, but straight to a canoe + back to the island. So as I couldn't let her stay there with a tourniquet tight on her arm there was nothing to do but be rowed across after them + take the thing off. When I got there I found her in a fairly warm hut & with pulse strong + rather faster (perhaps due to the rum). Told her to lie down + go to sleep. The dogs had already been buried they said. Why? This morning she is said to be quite all right. The snake was not killed.

Twelve mammals in the traps: 3 Phascogale, + Melomys musculus, 5 Rattus brachyurus (all from the savanna). Nothing from the 60 traps in the front. Am making up only six, including the Phascogale. Some were obviously caught yesterday.

Went down about 11 o'clock with the Sukis who were going to Rand's camp to fetch Healy back. Three big canoes, the one I was in being wide enough to put one of our folding chairs into. Crews of 6 or 7 Sukis in each canoe. They put their backs into paddling + we slipped along at close on 5 miles per hour. Took some pictures of them at it. The way leads over pass swamps at first + has been used so much lately that the swamp grasses so beaten + churned by paddling that there is now a narrow lane 3 feet wide (see photo.) Found Rand's camp Kakati a rather fine place – low + wet, though among trees. He had found a nest of one of the birds of paradise. The place was alive with mosquitos. Walked out onto the wet savanna. Lots of sun-dew + pitcher plant there. Signs of pig + wallaby. My boy Karamoia had 15 mammals for me, but nothing

different from this camp. No birds new either, but lots of new plants for Bress. Had lunch there; then Healy + I returned in p.m. for radio s'ked. at 5 o'clock. Saw that one of our Suki crew had converted a strip of band-iron (for boxes) into a belt.

In the evening just before supper fruit bats came in quantities to the flowering Xanthostemon trees, prowling + snarling at each other up there. They were apparently representatives of 3 distinct species. We collected 6 + look for more tomorrow night.

Fri. Sep. 18. Heavy rain in night; fair today. Besides the six bats; a Rattus and 2 Phascogale in traps.

Bress found an interesting species of ants of one of his plants. All on one small leaf were about a dozen workers, 4 or 5 winged sexual dividuals, one larva. When the leaf was tapped or even just touched each worker went through a sort of dance, tapping the leaf rapidly and audibly with its abdomen. When all were vibrating the leaf became quite noisy.

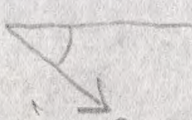
We had hair-cuts this morning, Healy presiding.

In p.m. Healy brought back 10 fruit bats shot by Rand too late to make them up. Then we shot four more ourselves.

Sat. Sep. 19. Traps: 3 Phascogale, 1 Rattus hoplylus, 1 Isoodon. A busy morning skinning bats. In middle of morning a procession of locals came up from the landing place, carefully carrying something, several somethings wrapped in the big spathes of palms. They proved to be 3 spiny-anteaters for one of which I had offered a hatchet. So I found out 3 hatchets.

Rand + Bress got back to camp this p.m. Rand brought 3 more fruit bats shot last night. Two common ones were badly fly blown + I discarded them. The third was in good shape. Radio news that the

"Ronald S." left merrily for our lake at 11 a.m. So we'll probably get hard about the end of the month. Sunrise Sep. 20 Skinned out two antelopes this afternoon (one had escaped during the night). The weather has freshened considerably & this evening is almost chilly.

Mon. Sep. 21. Equinox. A clear cool night & no fruit bats flew. We staged a digging exhibition yesterday by means of the spiny anteater. The animal just roamed about for a while, occasionally pushing its strong thick slender muzzle like a ploughshare straight into the ground. For a long time it would not dig in, & at length I started to cut a little groove in the ground to see if the animal would dig there. Apparently all it needed to start it was the sound of my digging, because it at once started to go down beside an old stump. Scaring the ground laterally with its front feet & probing & pushing with its head it started to go down at about this angle:  = ground level. We could hear small roots being snapped as the creature put on pressure with its stiff neck muscles. As it dug, the whole surface of its body rippled under its armor of spines with the muscular effort it put forth. Took photos.

Tues. Sep. 22. Shot one fruit bat last night. They seem to have deserted the trees about here. The flowers are now fully open, and I think it likely the bats prefer the opening buds. Anyhow I've got about 35 bats out of the Xanthostemon trees so far.

Walked out into woods for few miles this morning. Dark brown termites moving here everywhere; one lot comprising thousands of insects came down the trunk of a very large tree, traveled for about 25 yds along sticks, over & under leaves & roots and finally went up another even larger tree. About half of the termites were carrying what like a little pellet of chewed-up wood, or perhaps pollen in their jaws.

Also saw several pond skaters in a tiny puddle about a foot across, & no pond near. Couldn't catch them though because they flew so freely.

Found pile of Rand's boys collecting fibre for stuffing birds from the stilt roots of a Pandanus. Each root is about 4 feet long & the diameter of a

old-fashioned wooden curtain rod. It is stripped of bark, then split into small strips about half the thickness of a lath. These strips are soft & soppy but contain a tough fiber. They are pulled through a loop of hard twine, which strips away the pulpy parts & leaves only the fiber.

Wed. Sep. 23. Rain last night. Barometer lower. 12 mammals in traps but all common. Went down lake to inspect large cave being made by locals. (photos).

Our radio seems quite out of commission for sending, & I'm afraid the windings of the armature of the generator are burnt out. We can still receive, of course.

Thursday, Sept. 24. Fair. No rain at night. 10 mammals in traps: 1 Isoodon, 4 Rattus, 1 Melomys, 4 Phascogale. The last seem to be going through another reproductive stage. Both females had extremely minute pouch young. Yesterday one had young of very small size and one had them nearly ready to leave the pouch (i.e. the young of an earlier breeding cycle). The Isoodon had also a single very small young one in pouch.

Very heavy rain in afternoon. Messages from Moresby for Healy at 5 p.m. Could not acknowledge them of course.

Friday. Sep. 25. Fair after yesterday's storm. Brass & Healy have gone up the lake to a balanizing place where they will spend one night. Only four mammals in traps. Nothing particular in the way of news.

Sat. Sep. 26. Again poor weather.
The other day Healy wanted to buy a bow & some arrows for the local people. He told the sergeant to talk to them about it. The sergeant among other things remarked "You'd better bring pot mes. These people know all there is to know about bows & arrows. Why, before they got guns they all used bows & arrows themselves."

16 mammals in traps. Both Phascogale and Isoodon are in a new breeding cycle. Saved placental tracks from one ♀ Phascogale in hope of finding embryos later.

Sun. Sep. 27. Orville announced by radio that their plane will come in here on Wednesday, hoping that the "Ronald S" will have arrived.

Trie mermaids this morning one Phascogale alive. Have in the "live-traps" which I set out yesterday.

A Phascogale has its tail broken by the trap but is otherwise uninjured. It moves quickly along the bottom of a box and with difficulty climbs the angle between adjoining sides of angle wood box. Walks with hind feet widely splayed out. Pauses often with one or other fore foot raised off floor. Sits up readily on hind legs while looking up towards top of box. Makes faint noise between a squeak & a hiss when frightened. Springs half its length and snaps directly at finger or other object brought near it. Does this using movements of muzzle with fore feet. Washes base of tail with mouth. Repeatedly pokes its nose into small holes in floor of box. Bites at injured tail. Scratches with hind foot.

Mon. Sep. 28. In traps 3 Trelmys musculus, and in live traps one young Phascogale. The young Phascogale being uninjured acted somewhat differently from the one caught yesterday by the tail. The latter was allowed to get away. This specimen is a male and about 3/4 grown. Though very tiny it is exceedingly aggressive and will sit upright on its hind legs and the base of its tail, watching and hissing as you bring your finger down onto it. As the finger approaches the Phascogale springs its own weight in the air, clings on with its front paws and biting furiously. Its ears can be coiled or folded back rather like those of Dasyurus. It folds them and partly closes its eyes while it bites. This specimen was caught in a 5-gal. gasoline can buried so that the top was level with the ground, and baited with combination bait.

Spent the whole morning working over the power supply of the radio but got no where! Heard VHW3 (Orville) asking Moresby whether he still had a sked with us. Moresby said he had not heard us for ten days. No wonder!

→ The Phascogale supplied with an upright piece of wood, when it doesn't jump up, climbs down squirrel-fashion. That is to say it revolves the hind foot outwards and which taking downwards, clings with its hind claws.

This evening a great uproar over at the native camp on the island. It turned out eventually that one of the men wanted to get married to a young girl but because she was so young her father objected. The entire community seemed inclined to take sides, but after some 15 minutes of excited talk things died down.

Bress says the long grass in which wallabies live is Pollinia

Tues. Sep. 29. Today's interesting feature was a ♀ Trelong's mucali brought in alive with two well-furred young adhering to the posterior pair of nipples. The mouse was kicking + dashing about but the young "stayed put". The young have hair already and their bodies are about 35 mm. long. They coil their tails about me another slightly.

Most Rattus are now just breeding season and a number of ¼ or ½ grown specimens are being trapped. Today's catch 1 Planigale, 3 Rattus leucopus.

1 P.M. Just heard the engine of the "Ronald S." – much cheering by our boys and police. Lots of very acceptable mail on board. Checks stored in pm. No radio news.

Wed. Sep. 30. Busy packing specimens + getting ready to shift camp tomorrow. Put all my stuff on board this afternoon. About 2 o'clock much excitement as the motor of Board-Williams's plane was heard. She came down easily + well into lake and we rowed out, followed by a whole fleet of canoes to welcome her. Campbell the pilot and Williams who is running the upper Sly R. undertaking were on board. They brought bad news for poor Healy — a particularly raw deal — he is is stay behind with four police and be flown back up-river to "protect" the Board Williams property at Oroville Camp. Meanwhile his wife has just arrived in Darwin from Port Moresby in anticipation of his arrival with us back in Darwin in a few weeks time. The poor lad is feeling exceeding sore. And he had really no time to think things over as Williams got his mail (brought up on the "Ronald S.") and took off rather soon. The plane tried dragging her anchor but that was overcome OK.

The locals are having a grand time. Lots of tins + things going spare. They walk about with old cartridge boxes + print tins slung like variety bags from strings or from straps on their shoulders.

Thursday, Oct. 1. While things were being loaded I went over to the village once more and shot another bunch of photos of the people there. My shots yesterday were all duds because the film came loose off the roller + was not wound straight

We got away at 9 o'clock. The water grasses fouled the propeller a number of times & we did not get away from the mouth of the canal until just 12 o'clock. Everill junction was passed at 12.45.

At 2.30 about 10 miles below the mouth of the Strickland (Everill Junction) we passed lots of fruit bats hanging in the low trees there fringing the river. We stopped & collected some. Some slight trouble with the engine.

Stopped by a bank about 8 feet above water level – a dryish place with grass & bamboos. Got about 40 traps set out there. Mosquitos fierce. Brown picked up some plants. Both this bank and the trees where the bats were collected are on the left shore of the river.

Friday Oct. 2. Put the boys ashore to pick up traps early (nothing in traps), and away to a early start at 6 o'clock. Ellangowan Island passed 8.30 a.m. Copied "Frank's" sketch map (see beyond).

8.45. Fair sized Suki camp on left bank at mouth of creek about 40-50 feet wide. Circled to photograph. House without sides: roof right down to ground. Canoes came out & tried to trade bird of paradise plumes.

11.15 Just below Cassowary Island a large bat roost in fresh-water mangrove. We rowed ashore & got 12 of them. Strangely they sank very quickly, being quite unable to stay afloat after shot down for more than about half a minute.

12.45 Large village on high red bank on right bank of river. Village about 8 years old judging by age of coconuts there. Not many people. We gave a tow to canoe-full who wanted to go a few miles.

1.15 Passing Trimmelock Island (on left).

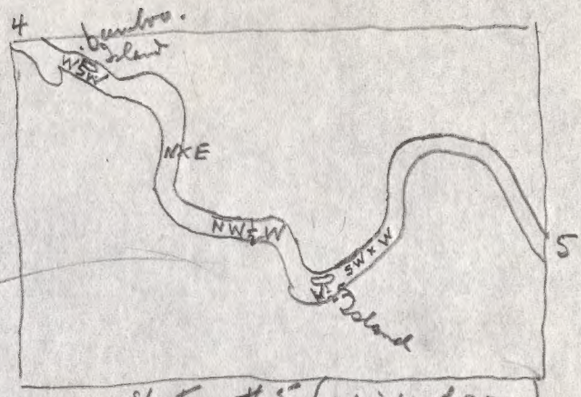
1.30 Another settlement, several houses, two very large, of which one had a yacht-shaped roof with curved pitching.

Flat village also on high bank. Tidal island visible ahead.

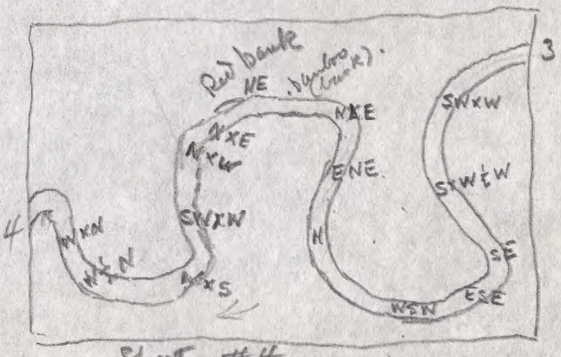
2 pm Passed the lower end of Tidal Island.

3 P.M. Passing Alligator Island. 3.15 a second island. Thousands of flying foxes on Alligator Island.

Sheet #6 (upside down)



Sheet #5 (upside down)



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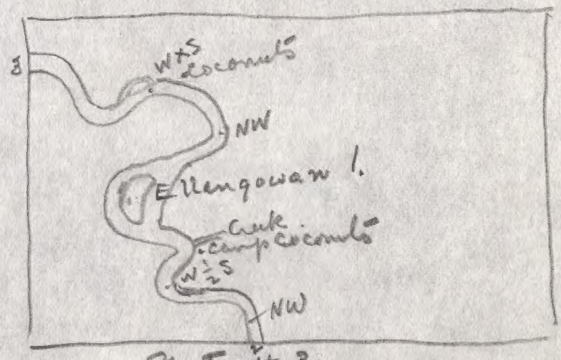

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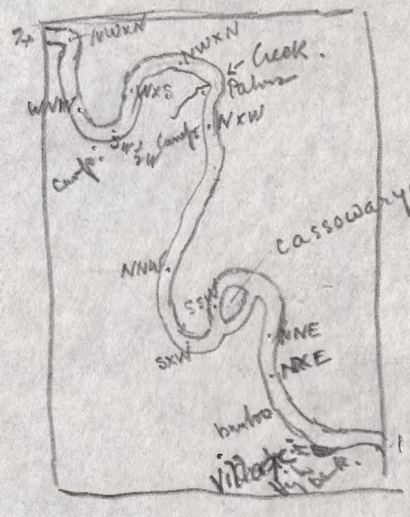

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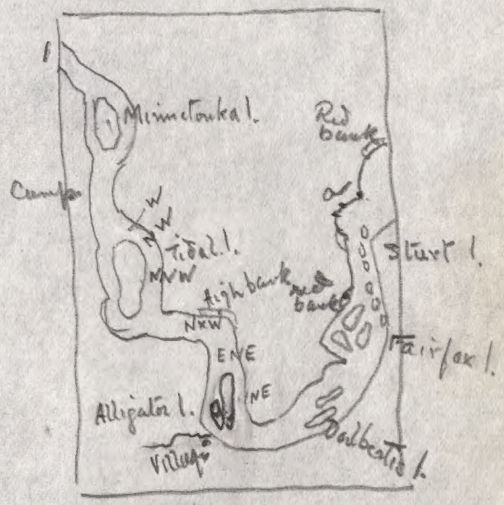


Sheet #1

This series of sketches is taken from the pages of diagrammatic drawings made on 8X11 paper by "Frank", native captain of the "Ronald S" during his trip up-river to fetch us at Lake Daviumbu, last week of Sept. 1936. Note: Two Islands make up "Alligator Island".

Cont. p. 27

a = Three Sandstone points, on one of which we shall make camp.

Anchored for the night in mid river at about 5.30 pm. Engine running a bit hot.

Found out of the six female fruit bats each with one embryo.

Sat. Oct. 3. Away at 6.30. A definite tide here, as I saw the ship swing to the change of flow just before dawn.

6.30 Passing D'Albertis Island. Vegetation all about here heavy forest. Banks only a couple of feet above water level.

7.30 In midst of Fairfax Islands.

8.10 Passed lower end of Sturt Island, the last of the Fairfax island aggregate. There are three high bank (15-20 feet) on the north shore (which we are following) one even with the middle of Sturt, another opposite the lower tip, and a third on a point ahead about 2 miles. All three have large clumps of bamboo on them. We went ashore this morning at the middle place & cut exploratory tracks in various directions. I went up-stream as far as the first bluff near which is a gently rising forested ridge going up to about 100 feet. After lunch took Brass & Rand to see it. We may camp there, but decided first to look at the third and lowest place. When we got back to the boat found the tide had risen about 8 feet in an hour and in the shallower parts of the river (the other side) has come up as a bore. That was about 3 o'clock. We moved down to the new place & I cut straight in while B. & R. went left & right respectively. Found mud & crab holes for a couple of hundred yards; then gently rising ground to a ridge. The inflow of tide continued till a quarter to five when we began to swing around on our mooring.

We discussed the possibilities of the several places and eventually decided upon the one I had found in the morning. Tomorrow we shall go up there and start to get camp set up. The location is good, right on the river and a good strong breeze day & night. We shall probably dismiss the "Ronald S" the day after tomorr.

Sun. Oct. 4. Started clearing for camp on highest point, even with the middle of Sturt Island.

A very valuable find by a boy sent to cut wood — a new mouse, probably of a new genus.

The boy's tale is that as he looked about he saw a

small hole about 20 feet from the ground in a tree about 6 inches thick. He tapped on the tree with his knife, put his ear to the bark and could hear that something was moving about inside. He cut the tree down and chopped open the hole where he found the mover.

The animal is about the size of a forest Melomys, is colored fawn above and has the ventral hairs white to the base, the white running up to the cheeks almost to the eye, and forward to envelope the roots of the vibrissae. Ear tending to the pattern of that of Lorentzimys, though less pronounced; eye very large and prominent; head short and broad as in Lorentzimys and Pogonomys; tail with the terminal inch prehensile dorsally, (note: Thomas's remarks on Chiromys), coarsely scaled; foot with large nail on first digit; hind foot broadest across the distal end of the metacarpals, the toes only moderately lengthened, the first too short, not opposable; genital parts small; sex ♀; mammary formula, 1-2 = 6 (as Lorentzimys); vibrissae long.

Just winding this letter up now for inclusion with the mail outwards.

Sunday, Oct 4. P.M. Finished mail for the outside even though the boat will not sail until tomorrow. Got my living quarters roughly put up, leaving the making of the floor until tomorrow; and will sleep ashore tonight. Flies are a nuisance here. No bore this afternoon, the moon being now past full. The bore is said to occur only at "full" and "no" moon.

Further data on the Melanya young (L. 23. P. 13): I gave them lots of the soft bark of "swamp mahogany" in a 5-gal. kerosene tin. The old monkey made a sort of nest in it and a couple of holes where she went in & out. We had the tin in the cabin of the "Ronald". One afternoon I saw a Melanya out of the tin & climbing around amongst the gear, and a bit later I heard one of the young ones squeaking, so thought "good bye" to Melanya, & caught one of the youngsters as our that its eyes were just beginning to open. Thought both would probably die. When I got ashore later, I lifted up the bark & to my astonishment the boss the old monkey in the tin with the young clinging on once more. Either she had gone back into the tin or there was another Melanya stowed away on the "Ronald S".

Monday. Oct 5. A good night ashore. Getting my fruit tabs dry as quickly as possible. They are rather troublesome things to get dry. My boys making the floor of the tent now.

Quite a bit of excitement a cassowary was seen swimming, about 50 yards out. There was a perfect fusillade from the boys' guns and the ship's dinghy put off after it. The silly fellow instead of slipping a noose over its neck hit it on the head with an oar. Before they could do anything more it sank and was not seen again.

Still getting camp put in order. A short walk in from. Good forest. A hornbill nest in hole in Bombax tree. Lots of fireflies at night.

Tuesday. Oct 6. Last night after putting out the light in my tent fly & getting into bed I saw the ceiling absolutely dotted with small fireflies. They flashed rapidly — every third of a second or so and there must have been scores of them. It was like a sky in miniature. Suppose they had flown in earlier, attracted by the light.

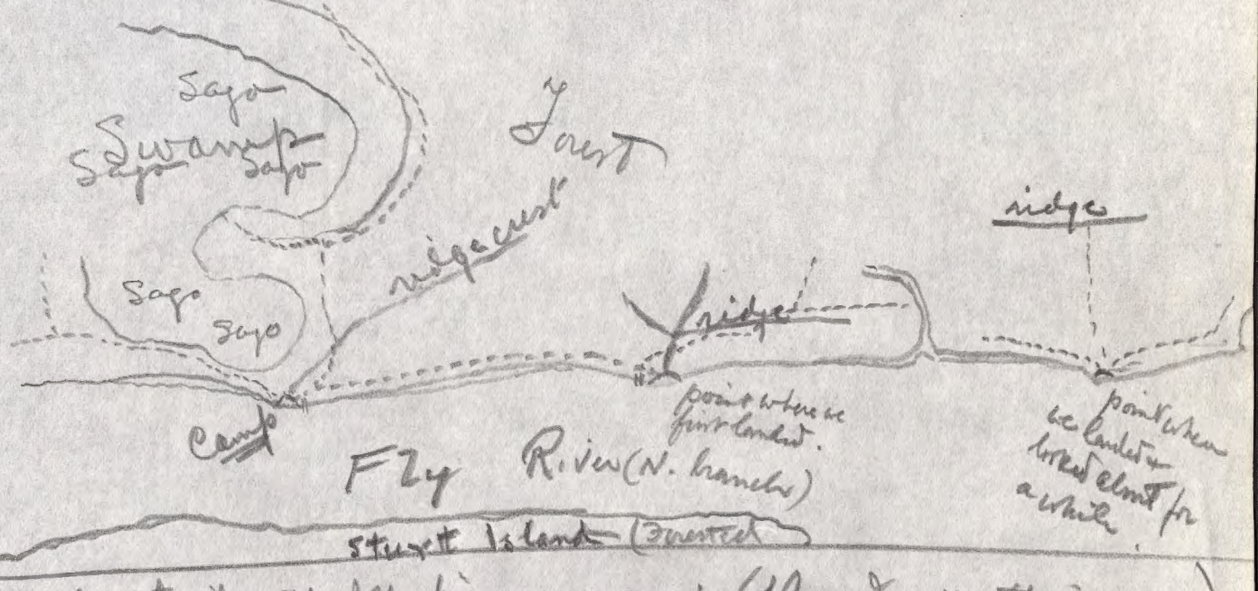
There seems to be an oil seepage on the river bank near us.

We gave the boys the afternoon off. They have been going pretty

steadily since we came ashore. Set 15 traps myself.

Wed. Oct. 7. Wea. fair. The bird boys shot two Doreopsis, males, one adult, one rather young. This is the first time I have seen D. in fresh condition (those at Davi number 3 had been skinned by the locals before bringing them to us. They have long heads with the snout rather blunt at the end. The tail is heavy and rather short with the tactile (in fever) surface insignificant. The hair of the lower parts is soft & nearly white and that of the inside of the limbs very short. Scrotum white; genital orifice rather prominent. Hands black in gray, with the fingers giving a pied effect — the 3rd & 5th black, the others white in one hand while in the other they are black. Hind foot & toes black. The characteristic reversed set of the hair shows from withers to occiput.

Cut new trail to west for short distance but much cane & going hard. Returned & started out up & over ridge. Found bush trail which follows first left, then right. Apparently the following sketch represents the situation as we know it at present:



along the trail north of the big sago swamp (where I went this a.m.) The native sign becomes more plentiful, and the bush track becomes more defined. There is a 3-pole bridge over a small dry gully. No doubt a few miles farther would bring me to a village.

Another Doreopsis brought in this afternoon. Rand got a beautiful green snake with pure white spots along the back. Yesterday seining the river we got a few small fish & prawns and a sea-snake, the last a real find.

During this mornings walk saw a large cassowary. Also we found three pigeons' nests, two of which were a few sticks laid on the tips of fan palm leaves.

The sequel to Melomys muscalis is that she did learn to climb in and out of the kerosine tin. Unfortunately she got caught in a trap. So I now have two orphan Melomys on my hands. They have their eyes open now & squeak loudly at night. They are learning to eat combination bait and they seem quite quickly among the bark in their tin. They are now 55 + 50 mm. in length (head + body). Their sexes (I think) are ♂ + ♀.

Thur. Oct. 8. Took long walk down river at 6 o'clock. Saw a Dorcopsis. Those shot yesterday had their stomachs full of finely chewed bamboo cane (the small cane), and contained quantities of round worms.

This mornings catch got: a Uromys with a strongly contrasted color pattern; also a young one; a small, short-tailed terrestrial Melomys; Two spp (?) of Rattus of the verjens group. The Melomys appears very closely allied to the species I took at Rona. It is different from the ground-living species of the upper Sly, which is much larger.

Last Tuesday Franks of VIG sent me a page & a half of instructions as to what might be wrong with the set & what to do about it. He was sending for nearly twenty minutes. The upshot is that I was able to send them to him once more this evening, that I have eliminated three condensers & patched up a fused resistor and lowered the voltage from the generator. There is no "voice" any more, but it's not needed.

Fruit bats about 6.45 to 7 pm came over camp, apparently attracted by the strong light from the gasolene lanterns. A few tonight as well.

The two young Melomys died this morning.

The forest here is of rather dry type, making a fairly good canopy but having little undergrowth. Here & there big stands of the small bamboo Schizostachyum

though soft & easy to cut this bamboo is mean to go through from its habit of falling over, clump after clump reclining on its next-door neighbor. A large forest tree which seems to be characteristic is the tree-cotton Bombax. Looping vines are numerous. Little fan-palms which abound are used by a small pigeon green with the top of the head yellow, as a platform for its nest.

The terrain is irregularly ridgy, the ridges going up to 100 feet. The basis everywhere seems to be a fine silty sandstone (2 specimens) on which from 10 to 30 feet of residual clayey matter rests. The subsoil looks to be identical to that of Daviumbu.

The tides are very irregular. The highest tides (at full moon and new moon) show a rise of at least 10 feet. For close on 10 hours water seems out & the river level slowly falls. Then for three hours the tide comes in, the level of the river rising very rapidly. At highest tides the water rushes up as a breaking wave or bore. Even the bore though ceases to break at camp due to the great depth of the water close by. On the opposite side of Sturt Island where the river is much wider and there are many sand banks the bore breaks. The strength of the S.E trade wind has quite a lot to do with the time of arrival of the tide. No doubt to the flooded ground we found when we shot the bats on Cassowary Island was due to the influence of the tide.

Sturt Island is heavily frested & densely pirged with Calamus. It is much nearer to the north bank than to the south bank of the Fly R.

Fri. Oct. 9. Mammals in traps 3: Hydromys, Rattus, Melomys. Mixed new lot of bait. Wrapped fruit bats.

Cut track up-river this morning — continuing the track of last morning. Forest along river bank which is high right up nearly level with the west end of Sturt Island. A muddy tidal creek

There joins the Fly R. A native-cut track leads L. N.N.E. P. 5 most of the way there. At the junction of the creek with the Fly I found an old native clearing. And half way there a tiny garden with a few banana trees in it.

Cleared the north trail of small side + overhead branches for going about at night.

Back in camp found Brian's boy had obtained a fine ♀ Distocharus in cutting down a tree. It is very phalanger-like. Distichous tail with tips prehensile. No flying membrane. Syndactyly of the hind foot. Small naked ears. The pouch is large + well developed – opens forward – had one large pouch young carried parallel with the mother's body. Mammae 1 (median). The young one with head very large – just getting downy hair on head and neck. Tail pigmented. Also soles of hind feet slightly at region of 5th metacarpal. Head + body of pouch young 45 mm. (Externally; the tegus and other parts of the interior of the cinch bear tufts of long, very soft hair, which project laterally from the head). The mammary gland converging upon a single median teat is placed at the bottom of the pouch near the pubic arch. No epipubic bones, present generally in both ♂ + ♀ Marsupials, seem to be absent in Distocharus. The musculature of the neck and chest is essentially that of Dactylopsila (L. 23, P. 12). Only 5 mm. of the tail-tip are prehensile. I find no trace of a flying membrane. Eyes large, probably luminous at night.

Put out a few mouse traps this p.m. Weather rather stormy-looking.

At sundown Rand failed to come in. We learned that he had gone with one boy up the track which I cut this morning. Evidently he left it + went inside away from the river. Boys sent out with lights + instructions to fire gun signals report that they heard him answer far inside the bush. It's unlikely he'll get in tonight (10 p.m. already) but he should make it early tomorrow. It's no fun getting "bushed" – ~~not~~ supper, and worse still, no mosquito net. Got thyla to VIG successfully this morning. Mick. Healy reported safely at Orville. Archbold reaches Sydney tomorrow.

Sat. Oct. 10. To our (at least my) surprise Rand got in at 15 minutes after midnight. He had heard the signal shots of the boys & at last worked his way to them, they going part I way. He reports there fished but abandoned Kilwai camp up the creek. Also Tea tree swamp &c.

Trap line with 2 Rattus, 1 young Uromys, 1 Melomys.

Spent morning with 2 boys cutting down trees with holes in them.

Two Macropus humii and a ♀ Dorcopsis brought in. A good chance to compare these externally very similar wallabies. Macropus

	Macropus	Dorcopsis
Color and external characters	Relatively brownish gray	Relatively bluish gray.
	dark cheek stripe	no cheek stripe
	a hip stripe	no hip stripe.
	Tail white beneath	Tail gray beneath.
	Ear white inside	Ear pigmented inside.
	Hair not reversed from withers to rump	Hair reversed . . . .
	Forelimb relatively long. (girth 40 mm.)	Forelimb slender (girth 30 mm.)
	Girth hind foot relatively narrowest part 55 mm.	Girth . . . narrowest part 45 mm.
	Foot relatively long & heavy	Foot relatively short & slight.
	Tip of tail beneath without enlarged tactile scales	Tip of tail beneath with enlarged scales

One of the gas Coleman lamps caught fire in the evening. Two boys have fever.

Sun. Oct. 11. Talked to VHW 3. Healy & Police got through by Williams's plane to Orville OK. Blue is fat & well. He bit only one of the police.

In trap Uromys, Rattus, & two spp. of Melomys.

Just heard a couple of boys singing one of the dance refrains of the Lake Daviumbu people "O-malli-pro-ka"

The Hydromys taken Oct 9 was trapped at the edge of a tiny tidal creek behind a fringe of fresh-water mangrove right on the banks of the Fly R.

Went out "jacking". Found tree where fruit bats feeding but could not get their eyes & saw nothing else but fine flies.

Mon. Oct. 12, Cloudy:

In traps only one thing of importance: a jumping rodent, size of med. sized Melomys. Color dull fawn; underparts pure white (to roots of hairs); a white brow area. Muzzle elongate; eyes rather small; ears long, much curved around long axis; fore foot rather long; thumb + digits elongate; hind foot very long + narrowed; tail with distal half white and whole of underside white; mammae, 0-2=4; sex ♀, rather young. The animal looks like a small Leptomys. Taken in trap leading from river over top of ridge. Vibrissae fine, rather long. Pigmentation of soles on metatarsal part only.

Note: the Mummys like rat # 2956 was taken from large hollow tree on top of ridge. Tree cut down.

This p.m. a second Leptomys was brought in — a fully adult animal this time, also ♀. Mammae in size + number as in Melomys. No embryos. Taken out of a hollow tree lying on the ground in well-drained forest.

Tues. Oct. 13. Went out with light to bat tree last night. Shot something (probably a bat) but it hung up + I have to go out and look for it today. Weather overcast; looks like rain.

Limb proportions of terrestrial Melomys # 2974 ♀ to be compared with those of Leptomys. Ulna (olecr.) to tip longest finger, 35 mm.; longest finger to distal end of radius, 15 mm. Tibia, 32 mm.; Ear from crown, 14 mm. Hind foot (s.u.) 26 mm.

Ratio $\frac{\text{hind foot}}{\text{tibia}}$: in Melomys = 81%; in Leptomys = 103%

Leptomys is a very slenderly built rat.

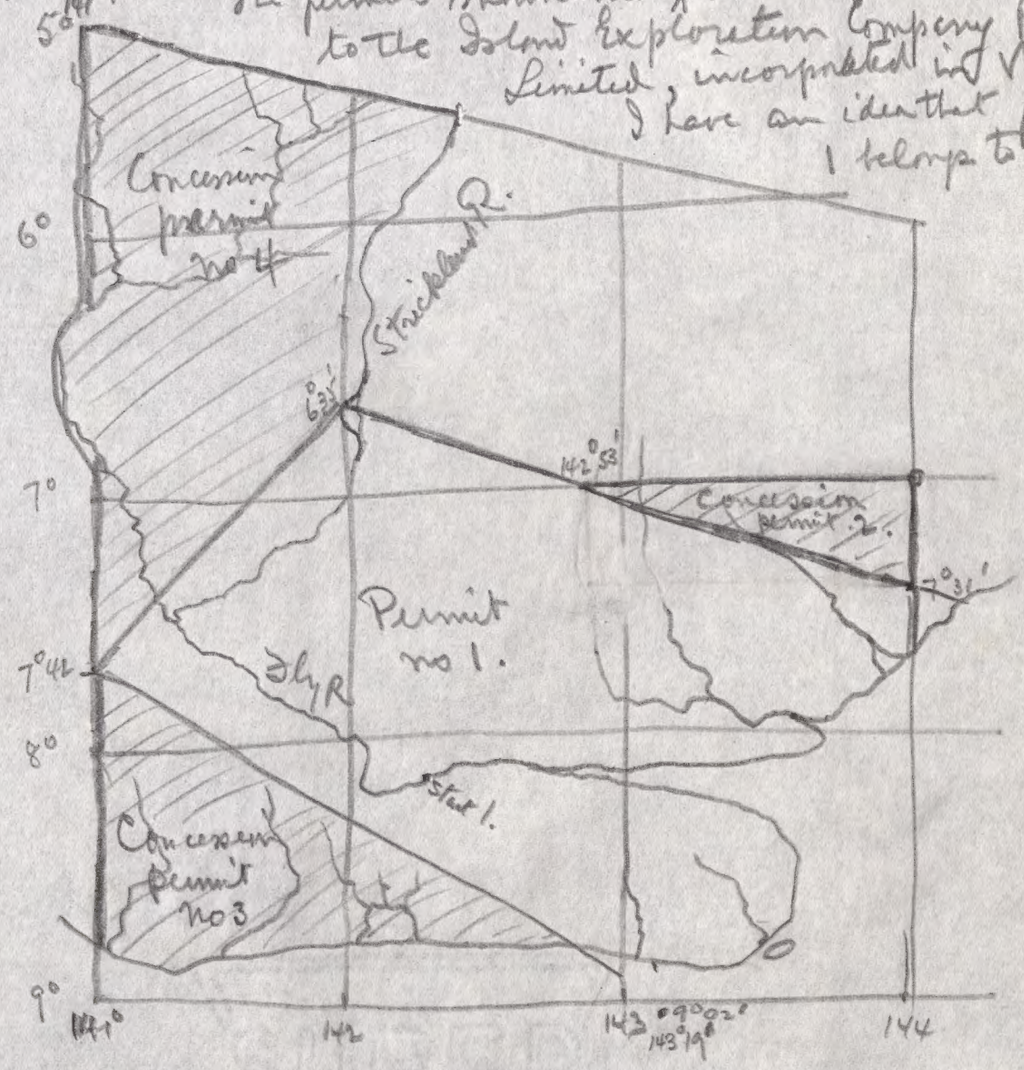
We have declared a holiday today. My boys ran traps (Rattus + Melomys only) and I have put the entire catch in pickle. Sent two out to get bat. Then no work till 4 o'clock rebaiting.

Two bats shot last night at the flowers on a big Eugenia tree have just been brought in. Both are the common Pteropus of the Fly R.

For three days we have had high tide at around 3 pm. Today it reached flood at 3.15 pm. Also for the past 3 days tides have been fairly bigger. The moon is almost at the end of her last quarter, so with "no moon" and the moon + sun pulling together we should again get very high tides. So far the bore has not developed.

Have also been watching the oil on the river. While tide flows strongly in and the water is deepening no oil is to be seen, but directly the flood point is reached & the current checks oil appears in long streaks on the surface of the river just in front of camp. This to me suggests that the seepage is under water & close to us, the oil being carried out right before it reaches the surface when strong up-river current is running. Probably it is up stream a bit (say 50 yards). Understand that some company has a very large area under concession at the present time. The country rock all about us is a fine-grained sand-stone.

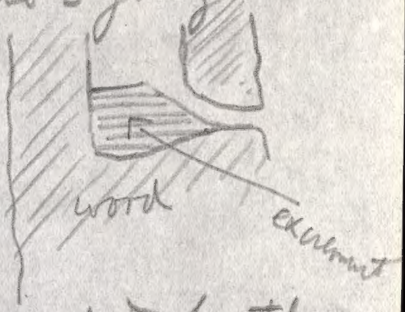
The permits shown below (nos 2, 3, 4) have been issued (ex Papua Gazette Sept. 18th) to the Island Exploration Company Proprietary Limited, incorporated in Victoria. I have an idea that permit no 1 belongs to Orion Oil Co.



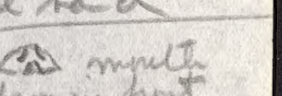
I wonder if Ward Williams Co is not looking for oil rather than gold?

Wed. Oct 14. A boy came in with three baby Urunys in his hand. Decided to return them to rest of try observe what happened. Nest hole in tree with smooth

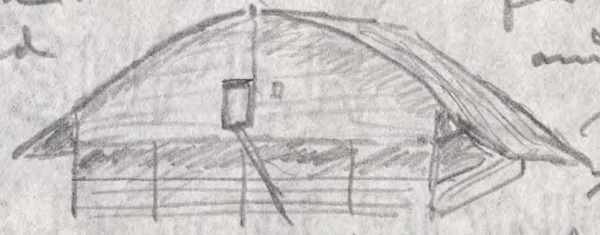
dark colour bark, + about 12 feet from ground. Hole small; not more than 2½ inches across + went straight in through 3 inches of wood. Built ladder against tree. Had to chop open hole a bit to get at nest but hope that the parent finding the 3 young there will continue to look after them.



The young were taken, I print, from a platform composed of the excrement accumulated over years. There was no attempt at nest construction other than the level platform which was reached by the upwardly sloping entry. The inside of the tree is quite hollow — a cylindrical cavity about 6 inches across. The parent rat was probably up inside there.

The largest of the young rats was already 95 mm in length of head + body; the other two about 5 or 10 mm. less. Colour dark brownish gray; under parts white; tail + inner surface of limbs slick + apparently hairless. All still had milk incisors, the upper ones diverging thus:  Ears blackish gray + fleshy. Feet + hands heavy + large, + already fairly strong.

This morning went by up river trail to creek. Turned due north along canoe road discovered by Rand, a good wide track through woods where there are three abandoned canoes. Track leads north along top of ridge, one or two grassy openings, a little cave, one place grown up to low bushes where heard a wallaby. Two miles from the river came suddenly upon large native house. See below: A few bits of color: Signs in red and white were displayed here + there. The objects in the foreground are short thick

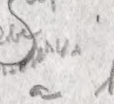


pieces of sapling, pointed on top + also painted in various ways. The boy + I did not poke around at all + had almost concluded it was deserted when a dog put his

head out of the door & looked at us. From that we decided the house is not abandoned. Possibly the people may come in to see us in a day or two, now that they know we have their address.

After lunch walked up in woods to see the Uromys tree. I went quietly up half way up my ladder when I heard a stuffy scurry up in the hole & knew that the female had returned to the 3 young. Went down & left things alone, as I don't want to frighten her any more. The leaf which I had put in the hole had been removed & dropped to the foot of the tree.

Saw native dog in woods east of camp.

Rand went up-river this pm in boat & brought back 2 small bats of different species (and probably different genera, though I have called them Rhinolophus provisionally. #2990 which may be Hipposideros to gray brown, has a horse-shoe nose-leaf & is provided with a median gland between nose-leaf ~~& pouch which secretes a yellowish waxy substance~~ surrounded by black hairs. The tail is long. #2991 has bright reddish fur; the ears are short, but have peculiar points at the tip and like  tip. The horseshoe nose leaf is present, but the gland is a hairless, whitish eminence which secretes a yellowish waxy substance. The tail is short.

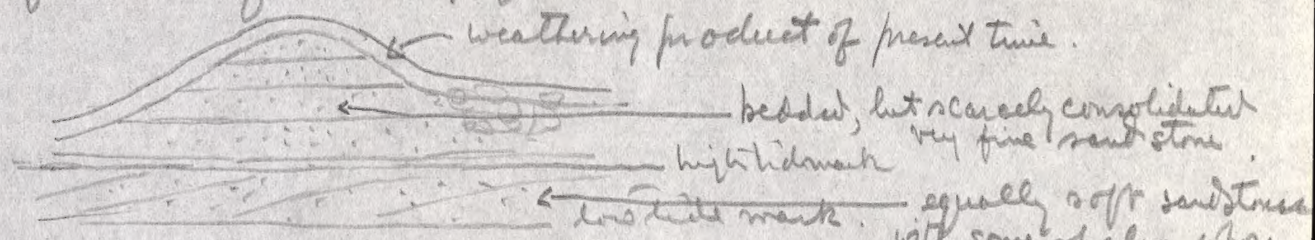
Thur. Oct. 15. The Uromys experiment has ended rather abruptly. This morning the hole was empty — no trace of the old one or of the three young. Not only that but all of the dry leaves which I plastered in the hole yesterday have been thrown out on the ground.

Trapped a big Varanid lizard by a noose hole at the base of a big tree. Hole 3 inches in diameter and a couple of inches above the soil level. You should have seen the lizard shoot into that opening when I released it from the trap.

Smoked 2 bats & a rat out of holes in a big tree this a. m. The bats represent a third species of Rhinolophus (?) The rat was a young Uromys.

This p.m. yet another bat #2997. This one had the frontal gland greatly developed & nearly everted when picked up.

Fri. Oct. 16. Went down the river trail as far as the creek about 1½ miles away. On way back went down on beach where we made our first landing (it was fairly low tide) to have a look at the geology & see if I could find any fossils.



As I read the picture there is a slight break in sedimentation where the beds lying horizontally come in contact with the dipping beds. Both seem to be late Pleistocene or Recent in age, non-fossiliferous, & to contain a good deal of cross-bedding. Whether lacustrine, riverine or aeolian in origin I have not found out. Suspect marine however. The hills & dips in the cliffs then are merely the products of differential weathering of horizontal strata of soft shales & sandstones.

Picked up the valves, still hinged together, of a fresh water clam. Also what may be a fossil seed (but free) not in the sandstone but on the beach. (P.S. Not a fossil)

The topmost layer of the diagram follows the contour of the surface. It is mixed reddish & whitish sandy clay, almost exactly similar to the subsoil I secured at Lake Daviumbe.

Another interesting bat smoked out of tree this a.m. See cat. # 3005.

Sat. Oct. 17. Put on a drive to get the bandicoot of this place. Its tracks appear in muddy low places close to the river. Setting 6 steel traps for it.

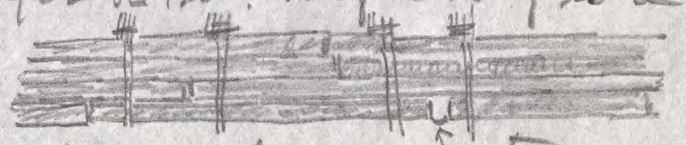
Also went out bat-smoking again. Unsuccessful style we treated at least a dozen they.

Brass & Rand picked up some Emballonura bats, apparently the same as at Black River, Palmer Junction & L. Daviumbe.

This from I shot a cassowary. He was just walking about in the wood.

Sun. Oct. 18. No results from trapping for bandicoot. In rat traps 4 Rattus rufescens, 1 Trichomys (Terr.)

Spent the entire morning building a trap-fence for bandicoots. It consists of a low tight fence of parallel poles built up one on the other to a height of 4 or 5 poles diameter, loop-holed at the ground level & a trap placed in each opening. The fence is placed along a stretch of ground, preferably level where signs of bandicoot's digging about are plentiful. Ours is parallel to the river are so far is 50 yards long, with six traps in it. We plan to extend it to 150 yds or so. The following is a rough sketch of how it is made. The



upright stakes go in pairs on either side of the fence and their tops are lashed together. In the afternoon took some butterflies.

New moon tonight: No unusually high tides today.

A very large, broad headed lizard 7'6" from nose to tip of tail, shot & brought in by one of our boys. May have given rise to the stories circulating about "tree-climbing alligators"

Small native dog wandering about hills. Appears lost & yowls a good deal. May be same one I saw at that house the other day. Our boys were there today & believe it vacated for quite a long time now. I'm not so sure.

Mon. Oct. 19. Developing is a bit awkward here. The water is so heavily charged with sediment that it must be settled for 2 days & then decanted (nobody has figured out how to make a siphon). Temperatures in early morning OK. 67-69°. Only 2 cars today. While boys were working on the bandicoot fence I took a good walk along the north trail & leaving away to west (the track I followed Oct. 7th) I came at last to the house found on the 14th. This time I approached it from the other side. It is a big long house in partial disrepair — Holes in the thatch etc. Our open

door at either end. Came through the remains of a rather extensive garden as I drew near it. The E-W ridge along which I traveled may possibly be the main divide between the Fly & the Aramia basin. Pleasant ridge to hunt along, once clear of the mass of arching cane at its SE end. Saw a cassowary & heard another.

Later collected some more butterflies. In afternoon went out to look at the low, wooded area lying between the canoe road and the small garden half way there. Shot a scrub hen.

I learned to day that some if not all of the boys have a distinctive sign or mark that he cuts on the bark of trees. He pointed out the mark of one of the bird boys. So I had him make his (it was Taikendo). His mark is //, the bark between the / lines being cut out.

Temperatures here range between 67° and 88° roughly.

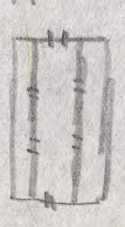
Tues. Oct. 20. This morning after measuring the specimens for the boys to skin I went over to the big ridge along the north track & turned east. Found that the ridge gave place to low-ground carrying tall forest & a tidal creek — the same I reached October 3rd (see previous letter). Followed down for a way & found a branch entering from the left (the one found by Brass on Oct. 3. All right to N & NE of the ridge is a big sago swamp.

The bandicoot fence was finished this afternoon. It amounts to 150 yards and has 20 steel traps as furniture. It will probably be days before anything gets caught by it, because things will have to settle down after all the noise & activity that went into making it.

Brass went botanizing across on Stout Island this morning. He reports it alluvial & subject to occasional flooding.

Wed. Oct 21. Overcast & low clouds at 6 a.m. A cuscus (spotted) was shot by Boroo this morning.

Went up canoe road to native house which I photographed. Had a look inside. The place divided lengthwise into 3 rooms



A door at each end and one or two window like openings between the rooms. Entrance to side galleries by notched poles under house. Some pig-skulls hanging up in one gallery. Outside a number of young coconut

trees not more than 3 years old. The road, still a broad canoe-road, goes right on behind the house and a quarter of a mile beyond there is an assemblage of tiny shelters each about 6 ft x 6 ft, touching, and about 20 all told stretched out in a line along the ridge. Two other larger shelters stand between them and the big house. I kept on for about ½ mile further; then turned back. The trail curved to the west + then back to N again to avoid the head of a gully.

Coming back shot a cassowary. First time I've ever heard its call. Imagine the bottom-most note of an organ lasting for a couple of seconds + spaced a few seconds apart. I could not imagine what could cause the sound. As the boy said, it was "all same fly in' machine".

Thur. Oct. 22 The tides seem all mixed up. Yesterday at 6 a.m. the water was still nearly high, but running out. This morning at the same time it is about half tide and still it is going out. Then it seems to have jumped away ahead. Yesterday evening it was high somewhere around 7 o'clock. All of these neps moon tides have been small so far.

Fri. Oct. 23 Tides small + very irregular. To our surprise a small tide reached high just about noon and stayed high for about 3 hours. At 6 p.m. it is on the way out once more. Have now 120 mammals of 17 species in this camp. Threatening weather this afternoon. Now a stiff pleasant breeze blowing.

Rand went jacking along the west track this morning + brought back 3 mammals, a Uromys (shot while running along a root), a Melomys, the white bellied form, (first seen on ground, but climbed to about 8 feet above ground; eyes shone well); and a bandicoot lacking a tail which has the foot characters and the big snout of that taken at Black River. It appears to be a Perameles. It was just crossing the trail + paid no attention to the light.

Sat. Oct 24. Today a new Melomys (#3059); also an Echimypera, the first mammal caught by our fence-traps. Later went out burning out bot-trees + poking sticks into

other hollow trees. Took only one bat, similar to a species already secured. Incidentally, I think both the bandicoot trapped this morning and the one shot last night by Rand belong to the same species. Only his is old & the other is so young that it has only just lost the milk pmrs & the 4th molars are not yet up. The strongly marked Uromys has again turned up.

Sun. Oct. 25. A third specimen of Leptomys was trapped today, also a female. It too has the white frontal mark. ~~On~~ In addition to some Rattus, a young Hydromys was taken, making the 3rd for this locality. It was caught in the fence-trap.

Yesterday p.m. gave us heavy showers followed by cooler temperatures in the evening.

A new bat (#3069), one of four (3 escaped) was taken in an old bamboo culm which broke to pieces when the boy shook it. It was the thin stemmed, soft bamboo, and was growing in fairly open well-drained forest. The specimen caught contained two embryos.

Rand went fishing this evening again, returning at 11 o'clock with 3 Uromys, a Rattus (see note p. 18) and a Dorcopsis wallaby. I've been feeling a bit too weary in the evenings, especially my eyes, to want to go out.

Mon. Oct. 26. Fair + clear + very hot. The tides are getting bigger, high tide coming about 1 o'clock. Nothing special in traps. I had 30-odd moved into the sago swamp behind camp this morning, and a hundred put out along the swamp forest of the head waters of the eastern creek which I visited Oct. 20th. This p.m. got some more lepidoptera. There's thunder brewing this evening.

Tues. Oct. 27. Overcast + threatening rain. Today a small Phascogale the 20th species of mammals for this camp was trapped. I don't know whether it is specifically the same as the one at Daviumba. Also got the ♀ of Macropus bruni. Already had 5 males. A pair of cuscuses, a Melomys and a Uromys complete the day's catch. Later another pointed-eared bat from hollow tree.

Pat Moseley radio'd me this morning there's civil

war going on in Spain.

In the two specimens ♂ & ♀ of Phelanger maculatus, both adult, I note that the epipubic bones of the ♀ are ¼ as large again as those in the ♂.

Excepting Pteropus and Emballonura, every bat so far taken in this camp has been either poked out or smoked out of hollow trees. In this slightly dry-type forest probably 20% of the hardwoods have holes running up the centre of the trunk, and quite a large number have several open knot-holes leading to the central shaft used by such mammals as Chiromys, Melomys and Distochurus. The bats are generally found in trees with much larger openings near the bottom.

Wed. Oct. 28. Went "jacking" up the canon ridge. Shot the small Pteropus of Daviesi feeding on the fruit of a Rubiaceous tree about 10 feet from ground; the tailed Macroglossus of the coast which was resting at the tip of a pinnate palm frond. Both bats' eyes shone well, the former orange, the other bright glowing yellow. Also collected Chiromys on a vine (thick stem) about 8 feet up; white-throated Melomys on the root of a tree; and two Dorcopsis. The eyes of all shone orange, those of Chiromys only moderately bright. Besides the above I shot two tree frogs + a gecko. The moon is now 3/4 towards full.

One of our old rafts were by on the current this a.m. Looks as though they'd had high water at Oroville.

My tent + fly is being raided by small black ants. They've been getting steadily worse for days in spite of my efforts to get rid of them. Today the place is just alive with them.

Burns went up river to the lower Fairfax Island. He shot two arboreal Melomys (large) two miles above camp on this side of river. Also he found a large colony of fruit bats (several thousands) on the lower end of the island he visited. The one Melomys was in a Pandanus; the other in a mat of leaves + branches in a tree.

Very high tide to day.

Thur. Oct. 29. Tides getting continually higher. The in-rush started at 11.55 – and in ten minutes the water had risen 4 feet. Among the usual trapped specimens got a third Echinopera, a very tiny one, though. The days getting hotter + hotter – most afternoons up to 90°. Till the end of our stay (less than a week if now) I am going to take a nap in the afternoon and go out with my light shortly at night.

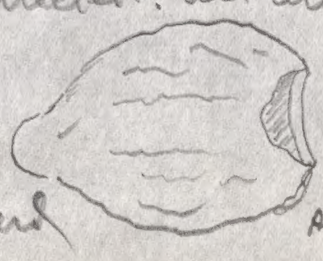
Fri. Oct. 30. Last night shot a Macropus bennii wallaby (never here than Dorcopsis) and the mate of the Melanops I took on the 28th. The latter was sitting at the fork of the same tree. It is the black-tailed, white-bellied species with semi-arboreal hind feet.

At 5 mins past midnight heard the rush of the bore coming up the river. It passed Stuart Island on the other side, merely swelling the waters on our side very rapidly – and continued around the bend to the south + up past Alligator Island along that north reach. I assume this of course from the progress of the noise + its gradual decrease or increase. At a guess I followed its progress by ear for about 10 minutes. I look for it about 12.30 to 1 in the middle hours of the day today. The moon is nearing full.

In traps 4 Rattus.

A small bore appeared far down the river at 12.30 but faded out before it got anywhere near Stuart Island. The water here at camp rose very rapidly however – about 4 feet in the first ten minutes. A faint noise from behind Stuart Isl. showed that the wave was breaking slightly on the south shore. It did not compare with the mid night tide however for intensity.

Sat. Oct 31. Out again last night. Shot 2 Ulromys + a Dorcopsis. One Ulromys was carrying a nut in its mouth which Praes identifies as the candle-nut Aleurites moluccana. The nut had had a small hole bitten into one end and some of the oily pulp extracted. All around the opening was wet with saliva.



The sketch is natural size, and to get at all the pulp it is probably impossible for the Ulromys without biting out more of the hard shell. It seems likely

that the animal holds the sough, knobby nut in its paws and scrapes away the pulp with either upper or lower incisors, but not both together, & then licks out the loosened material. The candle nut tree grows commonly here. I have seen hundreds of the nuts emptied through similar holes. It occurs on down to the coast, and at Mabaduane & Port Moresby, but not up-river, according to Brass.

I trap a fourth specimen of the new Leptomys, this time from canoe ridge. Two other came from low ground only a foot or two above the fresh water high tide mark and the other from drier forested hill-side. Yesterday Brass saw a small rat make off with a springy hopping ~~flight~~ gait, the tail held high, which corresponds to what I expect of the movements of L., judging from the form of the hind limbs & feet.

This morning Brass & I went to the point visited on the afternoon of October 3 to observe the bore, due about 1.30, and take pictures of it. Found the point marks the place of exposure of about 12 feet of shell-bearing strata, fine sandstone & shales. I could see a clam, an oyster-like shell & a large spiral shell among others. Whether they are marine or fresh water mollusca is not clear. The point marks the crest of a slight fold the beds coming up to it with dips of not more than (probably less) 10°. The strike of the fold appears to be WSW-ENE or thereabouts. Due to peneplaning the oldest beds exposed (those containing the fossils) are right on the point, as the diagram shows:

Beds to the east though still with slight easterly dip approach the horizontal. They are composed chiefly of shales and lignites with occasional lenses of sands.

The bore was disappointingly small. It traveled about 5 miles in 8 minutes or more or less 30 miles per hour. It came early – at a quarter to one. High tide 5 o'clock.

Large ~~most bore~~ of mid river.

Sat. Nov. 1. I forgot to mention of the Rattus shot by Reed (p. 15) that he reported the eyes shine rather well. So far, though Rattus

is one of the abundant species here I have not seen its eyes shine, ~~but~~ I have seen it by illumination of the light moving about. ~~but have not~~

Last night shot 4 frogs and a female bandicoot Echimypera with two half developed young in its pouch. The animal sat up once on its haunches.

~~Regarding~~ The young Dorcopsis which was brought in alive yesterday (the mother had been shot) was still to be classed as "pouch young". However when found in the woods, and after the mother had been shot, the boys had to wear it down. In camp when it was taken out of the pouch and placed on the ground (according to Reid who was present) it hopped all the way around the outside of the workshop, & had again to be caught. When I saw it later it was curled up in the pouch of the dead parent with head, hind legs & tail showing outside, and had very little jump left in it. Its battery seemed almost run down. Photographed it.

Just talked by wireless to Orroville today. Healy is wiring for provisions, &c. for six months. Tough luck!

Monday, Nov. Last night I collected a Uromys & a bandicoot. The latter was one of three seen. Their small eyes if caught right by the light glow reddish yellow. Also saw a wallaby and two others heard.

In the middle of the night ~~[illegible]~~ a disturbance: the two wandering boys sneaked into camp and chewed off a few feet and tails of wallabies. It was bright moonlight too. I guess they carried off a fairly heavy dose of arsenic each.

The Echimypera shot last night has reddish underparts and 3 pairs of nipples; that taken the night before is white beneath and has 4 pairs. Possibly a real difference which may tie in with the small-toothed form I described from the Oroomo area.

This morning up-river Reid shot another of the large Melomys similar to those collected by Brass collected on Oct. 28th. It was in a Pandanus with large flowering bracts. In

the two collected by Brass was also in Pandanus. And Brass brought back a male flowering tree, which looked not unlike a whitish corn cob in its wrappings, which had had the end eaten off.

Two more of the small bat #2994 (both ♂s) brought in by Ara who smoked them out of a big tree.

The assemblage 3114, 5, 6, 8+9 (Leiomys, two small bats, and two species of Melomys) was obtained by smoking a single very large tree.

Tues. Nov. 3. Photos showing the baby Dorcopsis (p. 19) have come out well. The position in which it holds its tail (like a jug-handle) is characteristic. The tip of the tail seems to be used almost as a finger.

The Melomys referred to above, Brass tells me, were collected from the ♂ inflorescences of two separate species of Pandanus, Brass's from his #8052, Rand's from Brass's #8138. The body cavity contained a very long slender parasitic worm.

Six bats from hollow trees today: 3, females of #2990 each with young clinging to them, came from one tree; the other three specimens (#3005) with long, acutely pointed ears, came from three separate trees. One of the young #2990 (a Rhinolophid or Hipposiderid — I don't know which) was alive and uninjured. I got a few pictures of it clinging to a post. It pulls its tail curled upwards & dorsad; and it makes a chattering sound (very faint of course) with its mouth. As in #2994 and 3005, these female bats had also specialized sacs in the lower abdominal region, huffy white in color. Probably they constitute a family character.

Wed. Oct. 4. The boat is due today & practically everything is packed & ready to go. Heavy shower this morning.

She turned up about 9 o'clock & we got loaded about 5 but anchored in the river close to Stout Island for the night. The current was so strong during loading that she dragged anchor twice, going a quarter of a mile downstream each time before she could be stopped. So we had to

keep the engine turning over for most of the day. Squalls + rain added somewhat to our troubles.

Thur. Oct. 5. Didn't quite make Madiri before dark + the tide set so strongly up-river against us that we had to anchor + wait for the down tide in the small hours of the morning. Played the victrola most of the evening.

Gordon, captain (retired from a sea-faring life). and Twyman, missionary & acting as chief engineer are on the boat. Gordon is quite a young chap + is in charge of Mrs Cowling's plantation at Madiri, and of course runs the Good Will for her. Mrs C. is now at another plantation of hers on the Island Mibu at the south side of the mouth of the Fly.

Fri. Oct. 6. Had breakfast ashore with Gordon at Madiri. We saw Miss Smith, missionary, whom we met there on way up last May. The other young lady missionary who was there is now married + she + her husband live across on the Bamu river.

Got the radio up + had a talk with Pat Moseley at sched. time (9.50 a.m.). Now we're crossing to the north shore to find a camp for Bross + Rand to stay for two weeks.

Reached a long-house village called Waribodoro a bit after noon. Found the "Vailala" with the new Resident Magistrate of Daru on board her, engaged in making a short patrol. Gave him four radio messages I have for Daru, as he'll surely be back there before I arrive.

Rand + Bross went ashore + found the place merely cocoanuts, sago-palms + mud. We stay here at anchor for the night.

Sat. Oct. 7. Went ashore at Ulio village - a wretched place surrounded by miles of equally wretched sago swamp.

We walked out along a muddy track running due N. for about 20 minutes or half an hour without finding any improvement in the country. Exposed to the river at the landing place is country rock — perfectly level beds of very soft brown sandstone of rather fine texture. No fossils, but ferrous concretions plentiful. People of village (a "long" house in poor condition) very run-down, and judging from the coughing I heard hotten with T.b.

Rand & Brass went ashore at midday at Segare Creek but found it nearly as bad as the other place. There is a village and a very clean white beach but nothing to collect. Accordingly we turned the ship around and ran back up the north bank to opposite Tradiri, anchoring off the village of Kaviopo for the night. Some heavy showers during the afternoon.

Sun. Oct. 8. A fine day & we moved up a couple of miles to anchor opposite Gaima, once a small government station. The location is on ground some ten feet above high water mark, and in among the shade trees bordering on a patch of savanna. There was a fairly strong breeze which made the river chop up quite a bit, but all the things were landed in a couple of hours. I went ashore to supervise clearing a camp site & Brass saw to the unloading while Rand received the waterials on the beach. At 11.30 went on board once more & we pulled up anchor & leaving Rand Brass & co in their new camp set out for Tradiri again.

Reached Tradiri about 2 pm without event. Went over to the mission (The Un-evangelised Field Missions) (and don't ask me what that really means) for tea & later for supper too with Miss Smith, Mr

Drysdale and Mr. Twyman, all missionaries. It was nice to get under civilized conditions once more.

Mon. Nov. 9. Clear and very pleasant. Almost chilly early morning. Word by canoe from Mibu that the "Quest" on which I shall cross over to Daru (she's a sailing cutter) has just gone across, but Beach will send her right back, so I ought to get out of here about Wednesday.

Left three of my boys to work in the camp under Rand. And today I sent the fourth, Aia out with thirty traps to set them in the scrub behind the rubber groves. May not get anything but hope to pick up a few specimen to allow me to classify the locality. Got out the partly dried material from Sturt Island amp and set it to dry some more. Have to wath pretty closely as there are two cats and a dog here. Made up a bait for the trapping out of boiled rice, peanut butter and dripping (lard). Went over to the mission where we had a violent discussion of the phonetics of the Gogodara language about which I know absolutely nothing. But we had series of small boys up on the veranda who were made to pronounce words of their native tongue over and over again. Put a few traps in the staore to find out which brands of house rats are inhabiting it.

Tues. Nov. 10. Fair. No special news. Going to radio VIG this a.m. In the afternoon went over to the mission to tea. Caught two small bats there -- Eptesicus, I think. In the evening the mission folk came over to supper with Gordon and me. About nine thirty we heard the rattle of an anchor chain. It was the "Quest" back from Daru. So I'll be leaving on the tide tomorrow morning.

Wed. Nov. 11. Picked up traps and packed up. Aia caught a Melomys muscalis, so savanna can't be very far away behind. Any way Gordon and took a walk out behind the rubber and saw swamp mahogany and the climbing pitcher plant of Daviumbu. The "bush" was probably pretty thick before so much woodcutting took place. It begins just beyond the rubber trees only a quarter of a mile back from the river. There is said to be a swamp back there beyond which savannas occur. The termite hills among the rubber are of savanna type, big reddish-earth mounds, with their bases partly excavated by bandicoots, probably Isoodon.

Transferred the collections frm the one ship to the other, and after an early lunch went on board. Got away from Madiri about one. The wind was light at first but later in the afternoon freshened. We had to beat against it though we had the outgoing tide to help us. Anchored at six off Magobi Island. We had passed the village of Auti on the upper end of Kiwai Island about 4 p.m. The "Quest" sails well. She beat a couple sailing canoes with double outriggers. But then she can come a good deal closer into the wind.

About ten thirty I awoke to find the boat which had anchored to let the rising tide go by just beginning to swing. So aroused the crew and we got sail on her once more and slipped on down the river. Reached Mibu about 3 a.m. and anchored as the tide was again about slack. In the morning I was rowed up the Mibu creek to Mrs. Cowlings plantation, a distance of about half a mile. She was there with quite a staff of laborers and her little girl Sharret (It's a queer name and I don't know how it is spelt), aged about 13. Mrs. C. showed me all over the estate, a coconut plantation of about 300 acres which has been allowed to to run down a good deal. She is at present reclaiming it actively. After breakfast I took some pictures and went off to the boat.

Thur. Nov. 12. Part of the last paragraph belongs under today's date. The wind was very weak until the afternoon and then we went fast down to Toro passage between the mainland and island. Got through the strait about three oclock but then we stuck repeatedly on the sand until about six when we got enough water to float us clear. Even so with Daru in sight on the horizon we had to go a long way out to sea

[illegible] Tuesday. [illegible] low tide. It was nice to get down [illegible] conditions once more.

Mon. 8. Clear and very, very hot. almost chilly early morning. Proceeded on high tide to the "mouth" on which I should cross over to Dum (she's a sailing cutter) but, just some crosses, she's not will be in right back, so I ought to get out of here about Tuesday.

At times of my hope to look in the dry water tank. At today I saw the fourth. Ha out with mighty tropic to get them in the water behind the rubber grove. They moreover anything out hope to pick up a few scholars to allow me to [illegible] my tad loosility. Got out the pitch [illegible] from Bunk I find cup and get it to [illegible] more. [illegible] to with [illegible] [illegible] the [illegible] and [illegible] up a [illegible] for the trouling out of boiling rice, salt butter and [illegible] (lard). Then over to the [illegible] [illegible] the [illegible] of the [illegible] of the [illegible] [illegible] about which I know absolut [illegible] nothing. [illegible] [illegible] [illegible]

following a line of stick standing in the water before we could turn and head for Daru. Smoke appeared on the eastern horizon and we thought it was probably the "Nusa" which is about due. But it turned out to be the new boat "Angus" which is to be used as a suply ship by the oil prospecting people who have gone up the river in the "Palma"

We didn't get in to Daru until eight thirty. I got the radio and my personal gear off the boat in readiness for the morning. Had a short chat with Beach and then turned in.

Fri. Nov 13. Have arranged to take my meals with Beach. Got the wireless up (used the mast left by Archbold to string my aerial to) Then Port didn't call. Could hear him calling other stations but he didn't call me. Well perhaps tomorrow. Very hot. Room temperature as I write (noon) 90.

In arternoon went over to see the R. M. Mr. Austin whom we last saw on the "Vailala" at the mouth of the Fly. I wanted to give him the corrected version of Mich Healy's telegram asking for six months stores. Claude Champion was there and they asked me up to Champion's house for tea. Met Mrs. Healy and Mrs. Austin there. Mrs. Champion and Mr. and Mrs. Schlenker who were there I had of course met before. Austin asked me into his house on the way back to look at some photos of the Tully and Tedi River region, just a bit west of the Palmer area where we have been working all this time.

Back at Beach's place I found the two men who are running the "Angus". They have a gang of Malays or Dyaks or something board from Borneo and have to go to Moresby to settle up matters of bringing them to work in Papua.

Saturday, Nov. 14. Developed this morning using some of Archbold's aero ~~fil~~ developer and some mouldy old hypo left lying around. Air temperature 75 -- pretty high. The film isn't dry yet, but as far as I can see it is not too bad.

Got through all right to Port today. Everything apparently o.k.

The "Nusa" came in yesterday bringing as passengers Dr. Vernon, and two men representing Vacuum Oil Co. The latter have a big crowd of Gossiago boys among whome are two of our old boys whom Archbold signed off a couple of months ago.

News that Mich Mealy has been appointed to Kerema in the Gulf. Mrs. Healy very pleased at news. Played tennis with the Champions, the Schlenkers. The latter are leaving on the "Nusa" for Moresby.

Must be something doing in the oil line up the Fly with these companies scrambling for places there. Percy Hinds is now working for Papuan Oil (which is the local representative of Shell).

Played bridge ~~xxxxx~~ in evening up at the Champions'. He leaves on patrol in the Vailala up to Suki Creek on Tuesday.

Sun. Nov. 15. Mrs. Healy came down to radio office at 8 a.m.. We got through to Oroville ok and she was able to talk to Mich, he by voice and she by my morse. She leaves today on the "Nusa" for Moresby. Doc. Vernon has asked me up to supper on Tuesday.

Mr. Leo Austin author of a number of Ethnological and exploration papers I have the references in my notes elsewhere.

Played cribbage with Beach in evening.

Mon. Nov. 16. No articualr news. The Nusa and the Angas both sailed for Moresby. Getting quite a bit of radio traffic.

following a flare of white, burning in the water before. We could turn and see for miles. Some appeared on the western horizon and then disappeared probably the "lines" which is usual use. But it turned out to be the new boat "Ma-ma" which is to be used as a supply ship by the oil prospecting people who have gone up the river in the "Lake".

We didn't get in to town until eight thirty. I got the truck and my personal gear off the boat in readiness for the morning. We arrived at the with beaun and then turned in.

Fri. Nov 12. Have arranged to take my meals with Sason. Got the airplane up where the mail left by Richard to arrive by August 1st. Then went around all. Found here him selling Sabin stations but he didn't sell me. Will perhaps "Sourter". Very nat. Room temperature as white (noon) 60.

In afternoon went over to see the S. T. Austin wreck. Got at gas on the "Wallace" at the north of the city. I wanted to give him the corrected position or rich nearly telegram. Going for six months before. Champion was there and they asked me if to Swanson's report for ten. Met Mr. Nelly and Mr. Austin there. Mr. Champion and Mr. Schlenker were there for a few of course met before. Nelly asked me into his office on the way back to look at some photos of the Nelly and Red River region, pretty bit west of the Fairway area we have been working all this time.

Back at agent's place I found the two men who are running the "Rugby" Club have come or "Lady of Dyke" or something board from Sorneo and have to go to Corpsby to settle up matters of building them to work in region.

Saturday, Nov. 13. Developed this morning using some of Richard's zero ftt developer and some monity and hypo left lying around. Air temperature 70 -- pretty high. Mr. Allen isn't up yet, but I'll see if he not too tan.

Got turned all right to Fort Lacey. Everything apparently o.k.

The "Ma-ma" came in yesterday bringing supplies for Swanson, and two men representing Vacuum Oil Co. The latter have a big crew of roughnecks boys aboun. Some of two of our old boys from Rockwell signed off a county or months ago.

Here that "Rich" has been up river to Kerome in the Gulf. Mr. Nelly very of Red at here. Played tennis with the Champions, the Schlenker. The latter are leaving on the "Ma-ma" for Rugby.

Just be something doing in the oil line up the "Ly with these companies scrambling for places there. Guy Hinds is now working for Swanson Oil (which is the local representative of Shell).

Played bridge Jenkin in evening up at the Champions'. We leave on patrol in the morning up to Red Creek on Tuesday.

Sun. Nov. 15. Mr. Lewis came down to radio office at 8 a.m. Went through to Corpsville on Wallace. We were able to talk to Rich, by voice and by morse. We leave today on the "Ma-ma" for Lorsby. Mr. Lewis was passed on to Lacey on Tuesday.

Met Mr. Lee Austin of Lumber or Ubrella. Gave him explanation report. Have the reference in my notes about me.

Played cribbage with Sash in evening.

Mon. Nov. 16. Arrived here. The Mrs. and the Mrs. Sash left for Corsby. Getting quite a bit of radio traffic.

Tue. Nov. 17. Still straightening up things. Not much radio work. Am correlating the map data of Champion and Karius, MacGregor, Austin and ourselves. Invited up to the Austins' to tea this afternoon and for supper to Dr. Vernon's.

Wed. Nov. 18. Making rat bait. Moresby didn't call this a.m. so a message on hand was not sent. Working on maps in afternoon and evening.

Thur. Nov. 19. Got rid of a message to Moresby and rec'd three. Dipped 120 new rat traps in oil to keep water from warping them. The traps which have just come from Moresby to replace a number of the old ones broken or lost, are of Swedish make.
In p.m. worked over maps with Austin.

Fri. Nov. 20. Change in wea. Y sterday p.m. and 1st night also this morning heavy showers.

Close of letter 24.

Circuit made in 2 hours @ about 2½ m.p.h.
or about 5 miles Oct. 19

4½

IN RE

CABLE ADDRESS "MUSEOLOGY NEW YORK"

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1936 NEW GUINEA EXPEDITION

RICHARD ARCHBOLD, Leader and Pilot
A. L. RAND, Ornithologist and Assistant Leader
G. H. H. TATE, Mammalogist
L. J. BRASS, Botanist
R. R. ROGERS, Pilot and Mechanic
EWING C. JULSTEDT, Radio Operator

FIELD HEADQUARTERS:
DARU, W.D., PAPUA

Sunday, Nov. 22 1936. Talking with Oroville camp this morning by wireless, I learned that the month has been very dry there, only three inches of rain having fallen. That makes it appear that the wet weather which we have had lately on the coast has not yet reached them. It is fine again today here. The rain having lasted from about the 18th until last night. Went out to dinner with Austins' last night. Doc. Vernon was also there.
Spent afternoon working out maps with Austin.

Mon. Nov. 23, 1936. Today the "Goodwill" is supposed to go across to Gaima and get Brass and Rand. They ought to reach here tomorrow.

Tues. Reading A. R. Wallace " Island Life". At midsummer at Black River Camp I set my barometer at 100 meters. Here in Daru it averages 50 meters. So about 50 meters or 150 feet will have to be deducted from all my altitude readings. The zero meter mark is even with 74.5 cms.
The "Goodwill" got in about eight oclock.

Wed. Nov. 25. Talked to Oroville at 6.30. They want limes and coconuts sent up by the"Ronald S".

Thur. Nov. 26
Fri. Nov. 27. The "Palma" from up the Fly with oil prospecting party and the Ronald S from Moresby came in today. Nicholson on board the latter to put new crankshaft in the "Maira".
Sat. Nov. 28. Radio went on the blink today again. Couldn't get off telegram to Archbold. Hope get it away Monday morning before we leave for the Wassi Kussa River.
Sun. Nov. 29. The "Ronald S" left at 6 this morning for Oroville.

We were ready to leave on Monday Dec. 1. but the ship with our stores on her came in and we decided to wait and get them. That caused us to miss the tide, so we only got away Tuesday. The "Goodwill" made an uneventful trip to the Western end of Saibai Island, having stopped at Mabaduane to pick up a pilot on the way. Pilot proved to be one of the men who collected for us while Brass and I were there last April. A quiet night at anchor. Wed. Dec 3rd we got up anchor about six, passed Dauan Island, a mass of granite some 700 feet high, sight the Three Brothers Islands far to the south. Reached the entrance to the Mai Kussa (Kussa means river). Worked steadily up it. Wide, deep, tidal. Exposure of what appeared to be limestone about five miles up from the mouth on the Strachan Island side. About five oclock passed the mouth of a wide river entering from the east. and a few minutes later reached the creek on which the village of Yaro is placed, a few score of yards up from its mouth. No people to be seen when we went ashore, but later a man and his wife and child were met. The rest were away somewhere. We wanted to find a man named Gainde, but he was away somewhere. He is supposed to be quite a power here and would have been helpful in locating packers.
Next morning, Thur. Dec. 3. Started about seven, down the SW arm and reached the junction of this river we are on with the Wassi Kussa about 7.45. Turned up-river and reached the present place, Tarara at 9.50.
Village again conpletely deserted. We are occupying the Gov't rest-house and several of the cottages. Got everything ashore, radio up, and 160 traps out among the four boys. Had Norman Gordon and Twyman for supper with us, they intending to leave in the morning.

Sunday, Nov. 22 1959. Telling with Orville camp this morning by
[illegible]. I learned that this month has been very dry there, only three
inches of rain having fallen. That makes it appear that the wet weather
which we have had lately on the coast has not yet reached them. It is
fine again today here. We with having heard from about the 15th until
last night. Went out to dinner with Madelyn last night. Joe. Y. was
was also there.

Spent afternoon reading and writing with Ruth.

Mon. Nov. 23. 1959. Today the "Roonah" is supposed to go across
to Galveston yet dressed up. They ought to be out in a hurry.

Tues. Meeting at Pelican " Island Inn ". [illegible]
river [illegible] from [illegible] miles. [illegible]
[illegible] to about 50 miles or 100 [illegible] to be [illegible]
[illegible] multiple reading. The zero meter [illegible] even with 70. [illegible]
The "Roonah" got in about eight [illegible].

Wed. Nov. 25. Sailed to Orville [illegible]. They went [illegible]
sent up by the "Roonah".

Thur. Nov. 26

Fri. Nov. 27. Day "Alamo" from up the [illegible] with [illegible]
[illegible] from [illegible] in [illegible]. [illegible] down the [illegible]
to put new [illegible] in the "Alamo".

Sat. Nov. 28. Long wait on the blimp to dry again. Could not get off
telegram to Orville. Got it away early morning before we leave
for the [illegible] Bay.

Sun. Nov. 29. The "Roonah" left at 9 this morning for Orville.

We were ready to leave on Monday Dec. 1. Sunbathing pulp with our [illegible]
on her come in and we decided to wait on [illegible] them. They caused us to
miss the tide, so we only got away Tuesday. The "Roonah" made an un-
eventful trip to the eastern end of Padre Island, having stopped at
Kingsville to pick up a pilot on the way. Pilot proved to be [illegible] of the
men who collected [illegible] while [illegible] there last April. [illegible]
night at anchor. Dec. 3rd we got up another about six, passed Dunn
Island, turned or grounded some 150 feet high, about the three fronts
Island [illegible] to the south. Reached the entrance to the Laguna (Laguna
Madre [illegible]). Turned easterly up it, wide, deep, tidal. [illegible] course of
[illegible] to be the stone about five miles up from the mouth on the
[illegible] Island side. About five o'clock, passed the mouth of a [illegible]
river entering from the west. And a few minutes later reached the
creek on which the village of Yoko is placed. Drew [illegible] up
from its mouth. So people to be seen when we went ashore, but later
man and his wife and child were met. The last were very [illegible].
He wanted to find a man named [illegible], but [illegible] somewhere. He is
supposed to be with a power [illegible] which have been helpful in locating
people.

Next morning, Sunday, Dec. 3. Started south, even, down the [illegible]
[illegible] the junction of the river [illegible] on with the [illegible]
[illegible]. Turned up river and reached the [illegible] place. Turned [illegible].
Village again completely deserted. [illegible] occupying the town [illegible]
[illegible] and several of the cottages. Got everything [illegible], [illegible]
and 100 [illegible] out among the [illegible] boys. Had [illegible] bottom [illegible]
for [illegible] with us. They intending to leave in the morning.

Friday, Dec. 4. This morning took seven R. brachyrhinus and one R? ringens.

The "Goodwill" got away about 6.15. Had answer to cable from Archbold. He has another 'plane picked out already for about six months from now.

Walked out along trail towards WSW for about a mile and a quarter. Very flat. Open tea tree and Eucalyp forest, with fringes of much heavier scrub on either side. Our water at present has all to be carried in from there, where a tiny chain of disconnected water holes furnishes the sole supply. The rivers are tidal and salt - far too salt to drink.

Saw signs of wallaby (savanna) and some kind of bandicoots. Last night two kinds of small bats flying above camp. Fruit bats in some numbers very high, all flying SW.

In p.m. Rand and I went up the west creek in the dinghy at high water. The chain of waterholes drains into that creek and we were looking for a better way of getting to it. The salt water reaches within a quarter of a mile of the fresh water holes at high tide. Also at the junction of fresh and salt I found outcrops of limestone which I want to go back later and examine. A canoe landing at the mouth of the west creek probably the beginning of a trail going north or northwest.

After afternoon tea I had Aia show me a trap trail I had had the boys cut while Rand and I went up west creek. It goes to the mouth of the same creek and up the shore for a short distance. Looks rather promising. A number of holes both in the ground and in trees.

This evening at dusk Rand and I each got a small bat (two species of Vespertilionidae, probably Myotis and Pipistrellus) and Rand made a very fine shot with a rifle and brought down a fruit bat which was passing over very high. It was one of a number. They were all flying SW.

Sat. Dec. 5. Overcast night which ended with thunder and a good downpour of rain about dawn. It is still raining as I write at eight oclock. In traps a number of R. brachyrhinus and one Isoodon.

Tarara is located bet een two main rivers, and in addition a good sized creek comes in from the west, emptying just on the north side of us. So actually we are on a point of land. The greater part of the terrain is flat & very flat. And is clothed with open tree forest. But where the ground approaches the rivers or the creek there is a steep dip on which bigger and denser forest grows. All around the village has at some time or other been cleared for gardens. The gardens are now abandoned and the clearing have grown up to grass. The tree savanna identical to what I saw at Mabaduane, but Brass says there are some different trees on it. As I've said before the rivers and the creek are salt. Tides: low today about 7.30; high about 1.30 p.m.

The R. brachyrhinus seem to be between breeding spells. One had very tiny embryos, the rest had none. Aspecimen caught was very immature, representing probably the last lot of young.

This morning along fringe forest. Used sulphur in three trees trying to smoke out bats. The second tree had one in it but we missed it. The third had a male and a female Rhinolophus (?), the latter with a young one clinging to it. These are the species with broad, rather rounded ears. Thetail is turned up beyond the first external joint. In the young bat the tail is turned up completely over the back. The ears are partly rolled or coiled and the tail is proportionately very short in the young bat. It sits or clings with thumbs of the wings and hind claws, chiefly to the wing membranes. When picked up it was reversed in direction with the mother, i.e. it was being carried stern forwards.

Went out afterwards with two boys and cut new trail to the south.

Sun. Dec. 6. Twenty specimens in traps: 3 M. muscalis 8 R brachyrhinus and 9 R. ringens. I didn't make them all up,and the only specimen in

breeding condition was one ringens which had three embryos. A number of ringens females were not quite fully grown, the same being the case with R. brachyrhinus and M. muscalis. One brachyrhinus juvenal.

Went this morning to look at the limestone exposure. Started at the waterholes and worked down the bed of the stream. Came on first exposures a few hundred yards down. One place with a five-foot waterfall (when there is any water to run). The waterhole stream is only a tributary of the main one up which Rand and I went at high tide in the dinghy. The main channel bends away to WNW. Got some strikes and dip angles approximately. But limestone badly mashed up and quite a bit folded. One good syncline exposed. Strikes all approximately NNW; dips varying from nil to as steep as 35 degrees. None of this appears on the savannas, so it seems likely that the region must be classed as a peneplain, the clayey surface soil being residue of limestone and possibly of any beds that may once have overlaid it. The time to see structure here is at low tide. I can account for the tidal or estuarine nature of this region only by supposing it drowned land. Wonder whether the peculiar form of Strachan Island with its surrounding tidal waters may not be due to its once having served as the mouth of the Fly R. The point of turn-off would be somewhere above the Fairfax islands, and the latter could be brought about through pirate drainage and slight warpings of the general earth level.

The limestone has no obvious fossils in it, but may contain micro-fossils. The bed of the stream contains a fair number of potholes. The limestone where not water worn appears greatly cracked and jointed.

In the afternoon Rand and I went by dinghy for about four miles up the SW branch. The river goes south; west; south; west; S and on around to ESE; then bach to a long WSW stretch; an S-loopto the right and again WSW. On the next corner a fair sized creek enters on the river's right bank, the main stream turning NW. We entered the creek and landed on its east shore a few hundred yards up. Behind a fringe of trees a few yards wide we found the usual level, burnt-over tree savanna. Rand shot a Pipistrellus which was flying above the creek.

The river thus takes in the main a series of right-angle turns, probably conforming in part with the geological structure of the underlying limestone The high places naturally occur at the bends, turning the stream into each new course; but those high places mark little more than where the peneplane, or perhaps a slight anticlinal fold is butted against by the river. The intervening points have high land behind them too a score or so of yards behind the water-loving Nipa palms which give those parts of the river its characteristic swampy appearance. Mangroves appear mixed with or in stands replacing the Nipa.

Mon. Dec. 7. Two boys out with colds and fever yesterday, but the other two (Gororo and Taikudo) have been pinch-hitting for them and brought in 7 and 8 specimens respectively. 4 ringens, 6 brachyrhinus, 3 muscalis, and (what I'm very pleased to see) 2 specimens of the Phascogale of the Daviumbo camp. Both (males) were trapped in long-grass savanna. The brachyrhinus comprise one large female with three embryos, 1 y. ad. f., the rest being juvenals of the past breeding season.

Went down the waterhole stream but found nothing in particular. In p.m. burned sulphur in a couple of hollow trees but nothing in them. Went jacking in evening. Shot only two night hawks and a kingfisher which is the second specimen of a new species according to Rand. Swarms of winged termites buzzing around my light.

Tues. Dec. 8. 14 specimens in traps: 4 brachyrhinus, 9 ringens and another Phascogale. The last without any young in pouch.

Heavy rains during night. The local policeman (one who came from Daru

breaking condition was one rhizome which had three embryos. Number of rhizomes tended were not noticeably young, the same being the case with the overwintering sent. Much is the brachyrhinus pupae.

Next this morning to look at the rhizome exposure. Shovel at the water's edge and worked down the bed of the stream. Came on first exposure a few hundred yards from. One place with a fine-root material (what there is any water to run). The rhizome stream is only a tributary of the main one up which runs. At present at high tide in the bay. The main channel bends away to W. Not some ripples and dip snails approximately but the stone badly marked up and quite bit rotted. The good rhizome exposed. Strikes all appearance. Like varying from hit to no study as to degree. None at this stream on the sawmill, so it seems likely that we region must be diseased. Lack of the clayey subtree soil making being residue of limestone and possibly of any some but may once have overlaid it. The time to see structure here is at low tide.

Not account for the vio I or enhancing nature of this region only by any data. It drowned land. Hope to get the peculiar form of transition island with the surrounding tidal weeds may not be due to the once lavish, served as the mouth of the bay. The point of turn-off must be somewhere above the Harrison island, and the latter could be brought about through private drainage and a right variance of the general drainage law.

The limestone has no obvious fossils in it, but may contain microscopic. The bed of the stream contains a fair number of rotten. The rhizome where not water worn is more generally cracked and rotted.

In the afternoon went and spent my day for about four miles up the stream. The river goes north, east, south, west, and around to east, then back to a long-drawn-out stretch on to-ward the right and again east. On the next comes a little creek enters on the river's right bank, the main stream turning south. We entered the creek only limited on its east shore a few hundred yards up. Behind a tribe of trees a few yards wide we found the usual level, burnt-over tree savanna. And not a flowing water was flying down the creek.

The river then enters in the main a series of right-angle turns, probably conforming in part to the geological structure of the underlying limestone. The high trees naturally occur at the bends, turning the stream into each new course, but there high ground is somewhat little more than where the peneplane, or perhaps a slight anticlinal fold is buried against by the river. The intervening valleys have high land behind them too a score of so of yards behind the water-loving tide palms which give those parts of the river its characteristic swamp appearance. Improves appear mixed with or in stances replacing the tide.

Sun. Dec. 7. Two boys out with coins and I ver yesterday, but the other two (Dorothy and Linda) have been pinch-hitting for them and brought in 7 and 5 specimens respectively. 4 rhyns, 6 brachyrhinus, 3 mucella, and (what is very pleased to see) 2 specimens of the true ogale of the swimbo camp. Both (males) were trapped in long-grass savanna. The brachyrhinus comprise one large female with three embryos, 1 y. ec. T. the rest being juveniles of the least breeding season.

Went down the water-hole stream to look nothing in particular. In p.m. burned out hut in the couple of hollow trees but nothing in them. Went peking in evening. Got only two night hawks and a kingfisher which is the second specimen of a new species according to Ward. Terms of lined trailers buzzing around my light.

Tues. Dec. 8. No specimens in traps: 4 brachyrhinus, 2 rhyns and another fragmentary. The last without any young in pouch.

Heavy rains during night. The local policeman (one who sees from

with us)who has been trying to round up carriers for us, came in to camp yesterday afternoon with half a dozen people, two men and four boys. It's a beginning, but we will need many more before we can move anywhere. Two of them speak Motuan and one has been to Daru.

Took two boys and completed a trap trail started the other day. At a q quarter of a mile out along the WSW trail my line diverges and enters the scrub on the south side. It gradually works around to the E, and after crossing patches of savanna and partly burnt forest it strikes the SW river about half a mile ~~down~~ up from the camp. Our track then comes in along the river bank. Found some of the nicest forest I have yet seen in this station. Plenty of good trapping places. Aia is ok again; Kanamoia still sick. Touch of laringitis, I think.

Wed, Dec. 9. The catch fell off a bit today; perhaps parts of the line need changing. Gororo brought in four, AIA and Kanamoia one each. Catch 1 Phascogale, 4 ringens, and one juv. brachyrhinus.

Got abat out of a tree along the SW river by sulphur smoke.

This p.m. locals brought in a Petaurus and an Isoodon. Brass's boy got a savanna wallaby from across the river to the SE. The Petaurus shows a very distinct gular gland in spite of its slight immaturity.

Last night the locals who are staying with us (ten of them now) put on a dance. It was virtually identical to the Daviumbu performance except that the chants were different and there was no attempt at dressing up for the occasion. They sing the same refrain over and over, lightly beating time with one of their arrows on the bow-string (rattan). The knees are lightly bent and straightened also to the time of the dance, and every half minute or so they all shuffle a few paces from where they were just dancing before.

One of them came out with me hunting for holes in trees this after-noon. We were trying to locate the hiding places of bats, rats and flying halangers. Actually we found no trace of anything.

Thur. Dec. 10. Three ringens, 1 Petaurus and 1 brachyrhinus in traps. Having a bit section of the line changed. None in breeding condition. Went with local boy and say where the little Petaurus of yesterday was found. In a savanna tree (Tristania;Myrtaceae) at least 150 yards from rain forest. It was driven out of a knot hole about twenty feet up, and when the boy started up after it, it volplaned to the ground where it was caught.

Went on a short way with two boys across the waterhole stream at its junction with the larger and across that one, onto an extensive NS stretch of savanna dotted with rather small trees and having a swampy herbaceous cover among which are Eriocaulon and a sedge. Through this savanna a track runs north to Bebedeben and several other villages.

The female Petaurus was brought in a short time ago. The pouch opens forwards, and there is no gular gland.

Saw a local boy cutting up wallaby meat with a bamboo knife. The knife cut just as cleanly as any of our steel ones.

In p.m. a baby Petaurus, eyes just beginning to open; tail hairs still closely appressed.

A carpet snake eight or nine feet long was brought in. It contained a young wallaby probably M. agilis, possibly M. oriomo, but not Dorcopsis.

Fri. Dec. 11. One Phascogale, 2 brachyrhinus, and four ringens in traps. one of the brachyrhinus juvenal, one ringens half grown

Last night a Pipistrellus knocked down with a stick; two Isoodon brought in by local lads.

with us) who has been trying to round up supplies for us, came in to camp yesterday afternoon with twelve dozen people, two men and four boys. It's a beginning, but we will need many more before we can move anywhere. Two of them speak Guian and more have been in here.

Took two boys and completed a trail started the other day. It is a number of miles out along the old trail by the divergent and enters the south on the south side. It gradually works around to the , and after crossing patches of savanna and partly burnt forest it strikes the river about half a mile down from the camp. On trees then comes in along the river bank. Some some of the finest forest I have yet seen in this station. Plenty of good tempting places. Air is so quiet! Mosquito still quite. Touch of malaria, I think.

Wed. Dec. 2. The cabin fell off a bit today, perhaps partly the little need dampin. Second brought in from, the remainder one each. Ten I trachogeis, 1 trigona, and one juv. bromyrhinus.

Out and out of a tree along the river by antium smoke.

Mr. J.m. Joseph brought in a specimen of a lagoonin fresh boy got a savanna walkby from across the river to the S. The returns prove a very distinct polar plant in a state of the August time entity.

Last night the locals who are staying with us (two or three now) put on a dance. It was virtually identical to the Dyiumm performance except that the chants were different and there was no attempt at creeping up for the occasion. They sing the same refrain over and over, lifting beating time with one of their arrows on the bow-string (rattan). The dances are lightly but on steadily and also to the time of the dance, every half minute or so they all shuffle a few paces from where they were just dancing before.

One of them came out with an nuntia for holes in trees this afternoon. We were trying to locate the nesting places of bats, bats and flying lemurs. Actually we found no trace of anything.

Thur. Dec. 10. Three rhinchs, 1 Petaurus and 1 trachyrhinus in trap. Noting a bit reaction of the line changes. One in crest trapping station. Went with local boy and , where the little leaturus of yesterday was found. In a savanna area (mixed), through least 150 m. from main stream. It was driven out of a knot hole about twenty feet up, and then the boy started up after it, it volplaned to the ground where it was caught.

Went on a short way with two boys across the a bridle stream at the junction with the Upper Kamarons that ole, onto an extensive savanna of savanna cotton, with rather small trees and having a sandy coloured cover grass which are Ilocaution and a sage. Through this savanna a track runs north to Upper Kamarons, several other villages.

The female leaturus was brought in a month ago. The young opens , and is to be with plant.

Saw a local boy with the [illegible] made with a bamboo [illegible]. The hair cut just as clearly as in of our great ones.

Saw a [illegible] leaturus, does not [illegible] to any well [illegible] [illegible] [illegible].

Found a snake plant of nine feet long, we brought in. It contained [illegible] mostly probably [illegible] [illegible] [illegible], but not [illegible].

Fri. Dec. 11. One Phoeoni Ia, 3 brachyrhinus, and four rhinchs in trap. One of the 4 rhinchs juvenil, one rhinchs milk green.

Last night a Phyllostomus knocked down with a stick. The Lagoonin brought in by local lads.

We now have about ten of the local men and boys in camp. They are beginning to hunt regualrly for us. They appear a much more sophisticated lot than those we had to deal with at Lake Daviumbu; wear ramis and several speak quite a bit of Motuan. Besides this place contains a go vernment rest house, and is regularly visited by government patrols. They also have dealings at times with the Dutch across the border at Merauke, either directly or by trade, for one of them is wesring a huge celluloid earring that certainly never came from this territory. They use bamboo bows and arrows.

Temperatures range from 22 to 35 centigrade.

This afternoon some six or eight more men arrived. Among them they brought four Isoodon. The people come from a place called Mata.

To date we have had a short spell of showery weather with thunder storms between the 6th and the 9th. Since then the weather has been fair and very hot. The original lot of men (locals) came from Derideri.

At five oclock six women wearing long grass skirts and carrying bundles of appalling size upon their backs came into camp. They are the wives of some of the men who arrived earlier.

Sat. Dec. 12. Last night shot a fruit bat out of the flock which proved to be of a different species than the usual type. Its forearm only 175 mm.

This morning the trap yield was good: Two ringens, one brachyrhinus, one Melomys muscalis, another species of Melomys and Hydromys. The last two are new to the camp and both are rare. The fruit bat, I think, is the same as one shot by Archbold at Daru and is only the second of its kind collected.

I had my four boys working overtime last night skinning five bandicoots by the light of the gasoline lantern (a fifth specimen was brought in just at dusk).

Later in the morning we went out again after bats in hollow trees. Tried about five but got nothing for our work. Back in camp found two more bandicoots and two more flying phalangers caught by local people.

Rand and Brass have been packing up in readiness for a two weeks trip tomorrow. They are going out about 12 miles to Mibene, a marshy place. I stay here to await the arrival of the government boat "Vailala", as I expect to return to Daru ahead of them.

Sun. Dec. 13. Brass and Rand with their carriers got away at 6.30. It was delightfully cool in early morning after a slight night shower, but right now the heat is tremendous and I don't envy them their trip at this time of day.

In traps a young Uromys with a few other things, making the fifteenth species collected at this station. Reorganized camp a bit. Had a radio table built and moved into the rest house where we have our main cache of stores. Cut a window in the bark wall on the west side to let a breeze flow through the house. Built additional water catchment place on the roof. When it fails to rain we have to send a mile for fresh water, the river being tidal and salt.

Got in touch with Oroville. The Ronald S with Healy on board is on the way down the Fly River. Sent off a message for Daru to them to transmit,as my wet cell can no longer be charged from the generator and I expect it to go dead any time now.At Oroville they are having showery weather now.

Sent Aia and Kanamoia across the river with the dinghy and instru ctions to get back at noon. They arrived only at 2.30, I meanwhile having visions of having to send out a search party for them. The worst of it was that no one had noticed just which way they had gone with the boat and we had nothing but a nasty leaky little canoe to go looking for them in.

We now have about ten of the local men and boys in camp. They are beginning to hunt regularly for us. They appear a much more cooperative at a lot than those we had to deal with at Lake Jackson; very rude and several people died of smallpox. Behind this place, contains a go vernment rest house, and is regularly visited by government officials. They also have meetings at times with the tribes across the borders of Uganda, either directly or by [illegible], for one of them is wearing huge cellulose earring that certainly never came from this country. They use bamboo bows and arrows.

Temperatures range from 64 to 85 centigrade.

This afternoon some six or eight more men arrived. Among them they brought four leopards. The people come from a place called Lwia.

We have had a short spell of unsettled weather, the thunder storms between the 8th and 9th. Since then the weather has been fairly good, very hot. The original boy of mine (local) came from Tridori.

Three school girls women walking long from [illegible] and carrying bundles of a selling size on their backs came into camp. They are the wives of some of the men who arrived earlier.

Dec. 14. Last night shot a fruit bat out of the flock which proved to be of a different species than the usual type. Its forearm only 1½ cm.

This morning the trap yield two good Tree rats, one Brachyurinae, one Leimoys musenlin, another species of [illegible] and Hydromys. The last two are the only and both are rare. The fruit bat, I think, is the same as one shot by Brocklehurst at Tororo and is only the second of its kind collected.

A few four boys working overtime last night skinning five bushbucks by the light of the reading lantern. A fifth specimen was brought in just at dusk.

Dec. 15. In the morning we went out again after bats in hollow trees. Tried about five but got nothing for our trouble. Later in camp found two more bushbucks and two more flying squirrels brought in by local people.

Pat and Grace have been packing up in readiness for a two weeks trip tomorrow. They are going out about 15 miles to Ilbonet, a mission place. I stay here to await the arrival of the government doctor "Vailale", expect to turn to and shoot of them.

Dec. 16. Grace and Pat left early this morning for Ilbonet. It was delightfully cool in early morning after a fairly hot night. Now, but right now the heat is tremendous and I don't envy them their trip at this time of day.

In the afternoon I went down with a few other things, making the different species collected at this station. Decreasing amount of bats. Had a radio talk built and moved along the east house where we have our main camp of stores. Cut a window in the brick wall on the west side to let the breeze flow through the house. Built sanitary water catchment place on the roof. When it rains it will [illegible] to be near a mile from fresh water, the river being little more.

Got in touch with the tower. In sound with Pesyl on board in on the way down the lake river. Sent off a message for boys to them to transmit as we will go to Lon [illegible] Gurnes from the gen. [illegible] and I expect it in [illegible] time. [illegible] the [illegible] and [illegible]

[illegible] to get [illegible] at noon. [illegible] arrived only at 3.30, [illegible] having [illegible] of having to send one a [illegible] for them. The worst of it was that one was [illegible] the [illegible] boy [illegible] the boat [illegible] nothing but a nasty [illegible] little [illegible] to go looking for them in.

Minimum temperature last night 22½ cg., max. 35.5

At 4.30 a call from across the river let us know someone wanted to come over. I took a boy and rowed over to find four men and a youngster who had come from somewhere NE of us. One was dressed as a village policeman. They had no food with them, but brought in three bandicoots and a juvenal flying squirrel which I bought. They have gone back for food and say they811 be back tomorrow. They say the name of their village is Bé.

Mon. Dec. 14. Changing some of the trap line toacross the river. Catch this morning was only four, a Phascogale with five young in the pouch, two ringens and a brachyrhinus.

Our friends of yesterday arrived again this time with bananas and yams. I didn't do as Rand did the other day -- buy all their food and them have to feed them. Instead I bought a little of it and told them to keep the rest to eat themselves while they went out hunting for me. They have at least one dog which they simply left on the other side of the river to howl its head off while they came across. Someone will have to go and fetch it.

Crossed to NE shore where some old gardens and fallen-down houses. Beyond Found some good-looking forest where started transferring traps (60) from the line run by Taikudo and Aia. On way back had Gororo takeme to SE shore in the bend of the river. The first part is mainly mangrove and nipa. From there I landed at the north bank at the mouth of West Creek. An old track leads up through some dwarf bamboo past three fallen houses (little more than shelters),into some really nice woodland, beyond which is again savanna. Am having the steps at the end of the old wharf (have I said there is a wharf here? There is one rather rickety but usable one and the remnants of two others) repaired. Then the dinghy can be moored and always afloat instead of high up on the mud as she usually is when wanted.

At 2.30 four of our boys with two locals came back from Rand's party. A notefrom Rand says they are at Panzan (?) about 5 hours walk out. So they didn't go to Mibene after all. They will be staying about 8 days. There is no forest at all. He doesn't aay in the note whether there is the swamp they hoped to find. They met some additional people including the police man of Rouku on the road.

Temperatures: last night min. 22½ c., today max. 34½ c.

Tues. Dec. 15. A big catch from the woods across on the NE shore with only a hundred traps: all but on e R. ringesns though, and that one another young Uromys. Of the series of ringens (13 of them) one alone is juvenal.

Shot another Pipistrellus last night. A light shower this morning again. The day will probably hot and steamy later on.

Shifting a second hundred traps into the NE woods across the river. Shall concentrate my whole battery of traps there for four days or so and then move them to the other big batch of forest as yet untouched on the north side of West Creek. By that time I hope the "Vailala" will have arrived and I shall pull out for Daru. Passed my first hundred specimens for this camp this morning (15 species). That number of species probably comes pretty near the total obtainable without a very protracted stay.

This morning the local people all slipped away, whether to their villages or not I don't know; but they seem to have told the boys they were coming back. Probably they've gone for more provisions.

Temperatures: Min. 23½ c., max. 32 c. Rather cloudy and early rain prevented the usual very hot afternoon.

About 5 oclock the local natives came back once more, bringing more food with them. They seem to live entirely upon yams and bananas.

Wed. Dec. 16. Catch (with 240 traps) 11 R. ringens, of which three were juvenals. Not too good but then we had a lot of rain last night. I find that I have already more than 30 ringens from this camp, and it

is questionable just how many more it is worth while to make up.

Beginning yesterday all trapped mammals come from across the river to the NE. The traps are all set in rather dense rain forest which includes trees up to two or two and a half feet in diameter. So far the yield includes only Rattus ringens and Uromys, the former abundant, the latter rare. Today the trap line count is stepped up to 300.

Went out to sulphur-smoke a few trees I have had in mind. Had just moved away from the first, thinking there was nothing in it when two bats flew out. I got the net back in place just in time to net a third. No more came out however, nor did I get results from any other tree, excepting a gecko. The bat was a male Rhinolophus.

Have had Brass's boy Mick fishing from the end of the dock. This morning he has caught three quite large fish and an immense crab. I had one of the claws of the last for my lunch (part) so you can guess that it was pretty large.

Temperatures: Min. 23 c., max. 32° c. Thundershowers this afternoon and steady rain tonight.

Gororo out rebaiting his traps, found a hole in a tree from which he poked out two bats, mother and son. Son very large, large enough to fly, I should have said, but mother carried him up onto a bunch of leaves where both were shot. They are the long-eared species of Sturt Island.

Inahobi my cook-boy pro tempore, has tried his hand at making bread today for the first time in his life. Our regular boy has gone out with Brass and Rand. In Inahobi's own words "I put him yeast. Bimeby he go up (making a gesture like filling a baloon); I put him along oven; he go down". From which you may gather that the bread was not exactly a success. It could be called tolerably good damper though. The mental strain was so great that Inahobi had to sleep right through the afternoon to regain something of his customary poise, and even yet his memory appears to be weakened. Tonight for supper he put on something he called stew. Apparently he had dumped the meat, potato and onion leftovers together, added a glutinous mess of flour and warmed slightly. If I survive his cooking I shall have done pretty well.

Thur. Dec. 17. Rain of various intensity all night; clearing at day-break.

Trapping perhaps owing to the rain very poor: two ringens and an Isoodon. The latter taken in the intergrade between savanna forest and true gallery forest. Went across to inspect the traplines of Gororo and Taikudo. Both fairly good, but most of the traps soaked and sprung by heavy rain, so having the boys roof them over with leaves this morning. Sent Aia and Kanamoia to do likewise after they had skinned out the catch.

Mick caught three more fish today. His triumph of yesterday was rather dimmed by his getting fever in the afternoon; probably he had been out too long in the strong sunlight and heat. Having the wharf (wolp the boys call it) repaired. I had the ladder rebuilt the other day -- the one on the end leading down to the water. Am now having a lot of new cross poles put in to take the tread of people going along the top of it.

Inahobi seems to be getting the general idea of telling the time quite well. He forgets about the minute hand, and only watches the hour hand so he is generally somewhere near right. Incidentally one of my boys (quite a while ago) came and reported that the clock was "dead".

Tried an experiment this afternoon. I have three work (general) boys in camp who have just about done all the odd jobs around. So I've goven them each twenty steel traps and an untouched patch of forest on the north side of West Creek to work upon; and instructions to trap for just one kind of animal, namely Echimypera the short-tailed bandicoot, which so far has not been taken at this camp, nor have any signs of it been reported. Not one of the three has worked with traps before, but they all think it is easy, whereas my regular boys know very well that it is not.

Went exploring with the dinghy down the river a way this afternoon. First stop right bank half way down the E-W stretch in front of camp. The tip of the peneplain reaches the river. Clothed with good forest, with savanna on either side, the savanna east of it distinctly on lower ground, some fifteen feet lower, the peneplain being around 30 feet above high tide level. No rock outcrop. Next stop on the outside of the bend at the end of the S-W reach, where river turns S. Here also the peneplain, some twenty feet higher than tide-top turns the stream. Also heavily forested, with savanna some eighty yards back from the water. Thus this "rain-forest" can be classed as gallery woods. Just before river reaches bend, a creek filled with mangrove growth enters from N. Third stop, on N bank about one third of way back to camp. Steepish bank with the peneplain atop. Here decomposed limestone outcrop, and distinct ledges visible down through the water, looking like beds of limestone some ten inches or so thick. Shall revisit place at low tide to get strike and dip and specimens.

Apparently when the piver cuts against the peneplain it almost always induces a strong forest development. Probably the effect is only indirect, and due more to improved drainage and sweetening of the soil; for according to Brass the soil of the savannas is strongly sour inspite of its underlying country rock of limestone. At any rate the ;picture consists of an erosion-etched peneplain, much of which is entire, slightly lowered in general level to allow entrance of the sea into the principal river and creek-beds, but with the top of the limestone generally some feet above high tide level. The broad, flat, surface expanses of the peneplain are now sour and support only tree-savanna, while the better drained portions carry forest whose largest trees reach two to three feet in diameter. Along the river faces in the actual tidal fringes mangrove and nipa palm grow, the nipa usually along the insides of bends.

Decomposition materials overlying the limestone vary in thickness from five to fifteen feet. Lateritic nodules apprea in many places on the surface. Some iron stains can be seen in the limestone itself.

Temterratures: min. 23 c., max. 33 c. Rains by 3 oclock, thundershowers.

Fri. Dec. 18. Rain for most of night.

Went back at low tide again to examine limestone outcrop seen yesterday. Rock much decomposed; parts stained brown, Beds where first seen apparently levelm but 30 yards to W a 20 degree incline clearly seen, so probably exposure in toto represents the western half of an anticline with strike nore or less N. Took several specimens of the rock.

Catch with the rat traps: 8 ringens, 1 brachyrhinus. The steel trap artists though they did not get Echimypera yet brought me the first fully grown Uromys for the station.

Radio from Austen, Daru saying "Vailala"unable leave till early in new year because of magneto trouble.

Took dinghy and went up main river this morning. Found limestone outcrop in two other places. Took bearings and number of notes which have put on map (see later). Going tomorrow up SW branch to do likewise. Hope by compiling all data to have fair amount of evidence re surface geology of the near-by country.

On second thoughts have decided to transcribe notes from rough map: the main river, or as I'm told, the Baura Kussa turns in a broad swing of a quarter of a mile in diameter, leaving the West Creek, to a NE stretch about ¼ mile long; then bnds to due N for another ¼ mile; then a couple of hundred yards NNW; and around to the right entering a ½ mile stretch bearing 80 degrees or parallel with the top reach of the Wassi Kussa. I did not go up that stretch very far. Now coming down river, turns are started or else completed by impact with the peneplain at the west end of the 80 degree stretch, the forest there being mainly tree-savanna. Rounding the bend a creek enters from the west, its mouth mangrove-filled, and just

beyond it the river again comes up against peneplain, here clothed with mixed tree savanna and rain forest. The inside of the bend is a welter of mangrove trees and fringes of nipa. Two thirds of the way down the N-S stetch and on the left the river again touches peneplain. I went ashore here (C). A single river terrace some ten feet above high water and the level ground fifteen feet higher. Tree savanna one hundred yards back from the river. A small gulley bearing SW showed massive limestone in its bed about six feet below peneplain level. Between savanna and water good gallery forest formation with a lot of dwarfed bamboo on terrace.

The bend from N-S to NE-SW is caused by the river again striking the peneplain. Here I landed again, finding two distinct river terraces, one five feet, the other fifteen feet above water level. The peneplain heavily forestedforested. Several old, nearly disintegrated blocks of limestone on surface of peneplain; ome pebbles of laterite (?) on upper terrace. From the water the junction of this piece of forest with the last place at which I landed could be seen behind a rather deep, mangrove-filled bay. The inside of this bend (on the right bank of river) was a dense tangle of mangrove. Also the inside of the next bend (opposite west Creek is the same. Nipa appears sporadically. There is far more mangrove. The ridge just north of West creek, which turns the river S is also densely forested. It is in that forest I have the steel-trap boys working at present.

Interpretation of all this is the main problem. I can't help thinking that my supposed peneplain with rivers etched into it is somewhere near the right answer. The valleys are usually two or three times as wide as the water filled beds today, the parts now not occlupied by river being filled up with ooze or silt on which the tangle of mangroves is found. Water cutting brings slow changes in the bed, cutting in one place, deposition in another. This brings one to question the rate of cutting in an estuarine river, and in rivers whose bottoms and sides are formed of the softest slimiest, non-abrasive lime-mud or clay-mud. Maximum tidal current reached is one to two miles per hour., and all the way along (except at a few corners where maximum wear is taking place now) the action of the water is slowed down by the roots of mangroves and nipa palms.

Have noticed a few small sink-holes here and there.

Temperatures: min. 23½ c., max. 33 c. Showers in p.m. but clear tonight.

Sat. Dec. 19. No rain last night. In evening I shot three bats: two Pipistrellus and one new to the camp with red fur, a Vespertilionid. Unfortunately I blew the last all to bits. However have saved enough to show the head and ears, one wing complete, both hindlegs and tail with the interfemoral membrane. So I think even if I never get another that I'll be able to identify it. The skull is almost intact. It's rare, or I would not have taken so much trouble with it. This morning the trappers brought in three Rattus ringens, and two more white-bellied Melomys, of which I had so far only one from this camp. The steel trap boys brought back two scrub hens.

This morning by dinghy up the Togi Kussa (the SW branch) for a couple of loops. Strong tide with me going and against returning. River goes first S, and then W. Landed at the upper end of the west reach (left bank), where river cuts against it and exposes the limestone beds. These nearly except at east end of a fifty yards exposure where they begin to dip E very slightly. The exposure looks like the E half of a very slight anticline. Brought back one specimen of the rock. On top the peneplain was only some twenty feet above river and clothed with tree savanna with a plentiful mixture of dwarfed bamboo instead of gallery forest. Mapped the river.

Weather overcast all day. Wind SE.

This area is singularly clear of pests: No leeches, no scrub itch, but some sandflies (punkies) at dawn and dusk. Of course the darned yellow-bellid houseflies are everywhere.

Went this afternoon to look at the steel trap lines. They are all along the north side of West Creek close to the water and along the shore of the Baura Kussa in the other direction. Decided to try baiting them. So far they have been set in likely run place. Made a bait of chopped yam mixed with rice and had some put around each trap.

This is Saturday issue day for the boys. Each one gets a tin of meat, a piece of soap, a box of matches and two sticks of tobacco.

Temperatures: min. 23¾ c., max. 29½ c. Overcast most of day. Wind SE.

Had good luck with bat shooting this evening. Got a Pipistrellus and two Myotis. Nothing new but I had shot only one of the latter up to now. The evening became quite clear just before sunset, and all the bats flew late compared with what theyve been doing the rainy spell just past. They did not appear until quite seven. The big fruit bats started passing over however about a quarter to, but very high, far out of gun range. They, during the wet weather have flown rather lower. Tonight too they were much more scattered than they are usually. Didn't see any bats that looked like the red one I shot last night. Counting up my catalogue, I find that I have collected just over 400 bats, of which about a hundred are in formalin. Then I must have around 300 marsupials, which leaves 600 to take care of the rodents.

Sun. Dec. 20. No rain last night. Catch 3 old, 3 young R. ringens. Just heard from VHW3 (Oroville) that a search party is being organized to look for Adamson and Champion who went in last April with a party of police and carriers to patrol the country to W and N of Mt. Leonard Murray which we saw from the air at 10,000 feet. It was evidently a heavily populated area, and in the midst of bad, rough limestone country. Moreover it was brand new country, and brand new people. It certainly is not a region I would have liked to go into first time. Brown told me that the"Vailala"has been ordered to Kikori from whence the search is to be started to help with transport or anything else. So that may queer her trip out to the west here. Probably shall get another telegram Tuesday about her.

Went this morning back to West Creek where I first found the limestone of this region. Traced it up quite a way. It bears away Nw to NNW. The limit reached by the tide is about a mile as the crow flies west of Tarara. And a hundred yards or so west of that the most westerly limestone exposure is found; that is to say, farther west the bed of the creek has not yet cut down to the unweathered rock. Just close below the highest massive limestone, a score of yards only, a tributary comes in over a horizontal ledge of limestone whose beds certainly appear perfectly horizontal. That brook course comes from N.

Found a peculiar dried-up mossy-looking growth on many of the lime rocks, which I now think may be a fresh-water sponge colony. Have saved some pieces.

Had a number of the boys out bat hunting but they got nothing.

At 4 p.m. half a dozen local natives arr'd with a note from Rand to say they have come part way in today and are looking around at the Agonis flats near a water hole (I presume a couple of hours out), and will be in tomorrow. Am sending back the bush people with three of our extra boys to help him, as he requests.

Temp.; min. not taken, max. 31¾ c.

Mon. Dec. 21. Catch poor: 4 R. ringens, 1 Melomys muscalis

Heavy shower early lasted until 8.30 a.m. Wind W.

Rand and Brass got in a few minutes after I had had my lunch. They report a fairly successful trip. They got me three mammals not yet in my collection for this station: Phalanger maculatus, 3 psecimens; Dactylopsila, 1 specimen; and a Murid which may well be generically new. The Dactylopsila came from the Rouka side of their camp. The new rat from between them and Mibene (their camp was at Penzara). The three cuscuses from the Rouka side also.

The rat is rather large (size of a large alexandrinus), but it has peculiarly long, narrow hind feet, built much as those of Leptomys, for which reason I think it may be a hopping species. Its ears are moderately large, and its skull of peculiar type which must be studied later after it has been cleaned. On the road back and a couple of miles from here Rand saw a boy shoot a Petaurus from a savanna tree, again showing evidence of its preference for a tree-savanna habitat.

The new rat had the tip of the tail missing, so we could not know its length. It was taken out of a hollow tree in tree-savanna, but down near the base of the tree. The mammary formula is 2-2 - 4, a formula which turns up repeatedly in widely distnct genera of Papuan rodents.

Tues. Dec. 22. Shot another Myotis (?) last night. Fruit bats few and very high.

A lot of natives including a boy who speaks both Motuan and English, by name Gaindi. We had heard of him from Austen at Daru. A whole flock of dogs came with them.

Catch a forest Melomys, two ringens.

Rec'd and sent Christmas telegrams to U. S. this morning. Port promised to get me a sched. with Daru, but I listened in to their sched. and of course he had to forget all about it. Thye work again at 2.30 this afternoon so perhaps I can get one of them then.

Wanted to get in touch with Daru operator, but Moresby forgot to tell him. Quite urgent for me to know whether the "Veriveri" in commission again to take me out in time for the mid-January "Papuan Chief" to Moresby. If "Veriveri" not available then must make canoe trip to mouth of Mai Kussa and walk overland the 50 miles to Mabaduane where I can get a sailing canoe for Daru. Am going to wait until next schedule on Christmas Day and try again to get thru to Daru. Meanwhile have ordered the canoes for the Mai Kussa trip to be brought up to Tarara from Jaro

Two Petaurus brought in in the evening, male and female.

Wed. Dec. 23. The boys changed 200 traps yesterday, so the catch jumped up. No change in quality however: 7 R. ringens and 1 Melomys.

Sent boys out bat hunting and myself set out for a good long walk along the WSW trail. Suppose I got out about 2½ miles. Most of the way the tree-savanna comprises trees of about three inches in diameter. Near the camp they reach six inches to a foot; and about two miles out I reached a quite large patch where none exceeded two inches -- mere saplings in appearance but so far as can be judged never to grow any larger. The pink flowers of a little sundew were scattered all through the grass; also a number of the grasses themselves seem to be coming into flower after the recent showery weather (it is fairly fine though overcast these days).

Gororo came back with a bat (Rhinolophus ?) which he got out of a tree with sulphur fumes and a butterflynet held against the hole. The other boys though they came later had none. They pick up traps tomorrow in anticipation of moving down to the mouth of the Mai Kussa by canoe.

Was amused and interested this evening to see that our boys, the police boy and medical boy had constructed cricket bats out of the bases of coconut leaves, the clasping basal part being the blade and the petiole of the leaf the handle. The ball was whittled out of wood or somethingvegetable, they had two sets of wickets made of sticks. Several of them had evidently played a lot -- prabably at one of the eastern mission stations. Two at least of the crowd were good bowlers and one was very good with his coconut-leaf bat. All have good eyes and can catch like nobody's business.

The wireless "air" is full of flying Christmas greetings. If you want to catch just how much Christmas still means to the World, just listen in to any of the commercial morse stations. They are shooting through continuous streams of Xmas Greetings. I heard a number of California stations and Manila was working duplex. And I can only receive freq. 30 to 50 meters.

Dec. 1. [illegible]

Thursday is rather large (also or [illegible] the morning). [illegible] long, merge bird feet, building [illegible] of [illegible], for which reason [illegible] may be a [illegible] species. [illegible] the monarchy [illegible] the [illegible] of [illegible] which must [illegible] [illegible] cleaned. In the [illegible] couple of miles [illegible] [illegible] [illegible]

Thur. Dec. 24. Veryhigh tide yesterday afternoon; peak about 3 p.m. Tide this morning not yet low, but expect to see low tide about 8 oclock. Moon only just past half, not due for full for about 5 days, so tides not increased on its account. Probably due to west winds blowing in from the Arafura Sea and banking up the tidal waters in the Torres Straits. Will watch today to see what happens. If I get big tides like yesterday's for my traveling I ought to get down to the mouth of the Mai Kussa fairly quickly.

Took rather long walk this morning out to the chain of water holes where Brass and Rand stayed over night on their way back from their western jaunt. Turner off about ten minutes before reaching water hole place and took old trail leading due S. About a mile along it came on a set of creeks, some tidal, others with fresh water, with a number of gardens and considerable expanses of bamboos on the south side. Found limestone exposed in the bedds of all of them. They evidently have a way out to the SW river (of this camp) some where above where Rand and I went in the dinghy a couple of weeks ago. The waterhole streams flow S and join those mentioned above.

Very heavy rain this afternoon with some thunder and lightning. Tide even higher than yesterday -- only a couple of feet below the wharf -- high water about 4 oclock.

Two more specimens of Petaurus brought in.

Talked with Gaindi this morning. He knows the names of all the R. M.s of Daru since the year 1. Asked him about Dactylopsila. He said if he had to go out and get one he would walk out along the trails (which means through tree savanna until he heard one chattering in a tree, and then he'd cut t the tree down. He states that Sambaram, Bebedeben and Gubam are all on the banks of this river (the N branch, so if that is the case our map is all wrongly drawn.

Fri. Dec. 25. Christmas Day, and the day when Moresby said he would be on the air as usual, and so far I haven't heard a squeak out of him. He Promised to call me at 9.50 however, and he may do so. But if he isn't working his regular scheds with the voice stations he may also have no date with Daru. In that case I should have to wait over until tomorrow. The two extra canoes for the trip came in yesterday.

Tide at 9.10 not yet quite low.

Boys playing another game of cricket to celebrate Christmas.

10 a.m. Moresby is not on the air at all this morning. Don't know whether he'll call tomorrow or not. And on Tuesday when I asked him about Christmas Day he said he'd be on the job as usual.

I listened in periodically through the day but VIG did not tune up once. Heard plenty of other stations late in the afternoon. Hope Port will call tomorrow.

Sat. Dec. 26/ This is a great game. Moresby again neglected to call. Even though it wasn'this day for calling, I thought he might have done so in view of having missed yesterday's schedule. Showers getting pretty frequent. Fixed up shelter over one of thecanoes this morning.

Tide high today about 5 p.m.; some six inches only from flooring of wharf. About fifteen more local natives came in today, including six women. All came from Rouku on the Morehead River.

Sun. Dec. 27. It took just half an hour this morning with four boys taking turns at pulling it over, to start that darned radio motor this morning. It's a most unreliable piece of workmanship. Expect to talk to Oroville this a.m. at 8 oclock.

Got through to Oroville. He is going to try to get Thursday Island to call me at eleven. He has no sked with VIG today. Have arranged to listen at three p.m. and six p.m. for VIG and Oroville will call again at 5.30 to see what's happened. Also trying for VIG at 6 a.m. tomorrow morning. Going over now to try.

Thur. Dec. 22. Morning tide yesterday afternoon peak about 5 p.m. This tide morning not yet low, but expect to see low tide about 6 o'clock. Moon only just past half, not due for full for about 5 days, so tides not increased on its account. Probably due to west winds blowing in from the Pacific and banking up the final waters in the Thames Estuary. Let water today to see what happens. If I get big tides like yesterday's for my travelling I ought to get down to the mouth of the Lea fairly quickly.

Took rather long walk this morning out to the chain of water holes where I was had stopped over night on their way back from their western jaunt. Further on about ten minutes before reaching water hole place and took old trail leading due S. about a mile along it onto a set of creeks, some tidal, others with fresh water, with a number of yarings and considerable expanses of bamboos on the south side. Some lines exposed in the banks of all of them. They evidently have a way out to the SW river (or this one) some where above where I had and I went in the dingy a couple of weeks ago. The waterhole stream flow and join those mentioned above.

Very heavy rain this afternoon with some thunder and lightning. Tide even higher than yesterday -- only a couple of feet below the "dry" -- high water about 4 o'clock.

Two more specimens of Petrurus brought in.

Talked with Cairnot this morning. He knows the name of Mr. M. of Yarm since the year 1. Asked him about Dotylopsis. He said it he had to go out and get one he would walk out along the trails, which means through trees swarms until he found one overlaying in a tree, and then hack out the tree down. He states that Bambram, Tabenbon and Eubam are all on the banks of this river (the N branch), so if that is the case our map is all wrong above.

Fri. Dec. 23. Christmas Eve, and the day when orderly would be on the air as usual. But so far I haven't heard a squeak out of him. He promised to call me at 8.30 however, and he may do so. But if he isn't working his regular sched with the voice stations he may also have no dope with Darw. In that case I should have to wait over until tomorrow. The two extra canoes for the trip came in yesterday.

Tide at 6.10 not yet quite low.

Have playing another game of cribbage to celebrate Christmas.

10 a.m. Orderly is not on the air at all this morning. Don't know whether he'll call tomorrow or not. And on Tuesday when I asked him about Christmas Day he said he'd be on the job as usual.

Interesting to speculate why. Perhaps it may be old matters up once. Heard nearly or other stations here in the last hour. Here goes for a call tomorrow.

Sat. Dec. 24. This is a great game. Orderly again neglected to call. Even though he was talking to everything. Thought he might have done so in view of Christmas Day yesterday. However getting on with the job. Either up at daylight or one of reasons this morning.

The high tide about 6 a.m. gives the index only from 1 foot of water. Good fishing more local natives due in today, including six canoes. Lots from south on the Brisbane river.

Sun. Dec. 25. Christmas Day. Left at 7 from Birnam Island with four boys taking turns at paddling. However, to start by a second radio motor was running. Left in most of the gear on workmanship. Hope to tell to Tony the thing a.m. at 8 o'clock.

Got up to Doville. He is going to try to get Thursday latest to call me at eleven. He has no dope with VIB today. Have arranged to listen at three p.m. and six p.m. for VIB and Doville will call again at 8.30 to see if I get response. Also trying for VIB at 8 a.m. tomorrow morning. Going over now to try.

Mon. Dec. 28. Was talking to Oroville wondering how ~~xxxx~~ we might get in touch with Port Moresby, when suddenly he came in and said he had just been listening to us. He cleared our business quickly and sent on my message to Daru asking him to come in at one oclock. At one I picked up Daru and got Beach to the other end where I was able through the operator to get him to send a large sailing canoe to get me at the mouth of the Mai Kussa. The canoe is due to get there to pick us up on the eighth of January. So at last matters are settled. Spent the rest of the day packing up and generally winding up my part of the collections which are being left for Rand to bring out.

Tues. Dec. 29. Full moon last night. Got everything down to the water side in readiness for loading. Tide still low at 5.30 but rose quickly. We got away from just at eight a.m. First bend (r) 8.15; second bend (l), ~~(time not noted); third bend (r)~~ 8.50;

Our little expedition comprises three canoes with double outriggers copied after the style of the seagoing kiwai canoes. I have each one rigged with a small fly over it to give a bit of shelter to our gear in case of rain. We plan, heavily loaded as we are, to work down on the tides to Azasaco (port of Buji) at the mouth of the Mai Kussa. This morning's tide was not a very high one, and probably we wont get many hours travel before we meet the incoming big evening tide and have to tie up till it readhes high (a out six oclock). In my canoe I have my first boy who speaks some English, Kanamoia who functions as cook boy, and a crew of two locals. The other two canoes are in charge respectively of the police boy Koimi, and the medical boy Kousa. In each canoe I have four of our regualrs and a local crew of two.

Third bend (r), 9.10; fourth bend (l), 9.19; fifth bend (r), 9.40. We still have the falling tide with us, but I doubt whether it gives more than ½ mile per hour. We seem to be traveling at about one third of the speed of the "Goodwill" coming up.

The 9.40 is the last sharp bend we met. The river runs generally SSE. I stopped at 11 to let the boys get fresh water at a place they knew about. The local boys that is. Thinking the tide must be just about low and ready to turn I decided to wait over, cook food and catch the evening high tide. But as I write it is past noon and the water is still running out, so I lost at least an hour. The tides are so darned uncertain in these parts that you cannot calculate them as you can in most parts of the World. We are on a savanna from which the trees have mostly been destroyed by fire. The water, a seepage, is good.

Decided to push on a bit more before the tide gets too strong. Pushed off at 1 p.m. The boys, knowing they are on the way out, were anxious to keep moving, and it was all the same to me so we went. However we naturally didn't make much time. A light, intermittent west breeze helped a bit thos.

About 3.30 a stray fragment of SE wind sent us to cover. That wind coupled with the still rising tide was too much. So wetied up at a fairly good place at 4 p.m.

5.30 p.m. We are now set either to go on by the light of the full moon with the tide as it begins to fall, or to stay the night through. Rain is threatening from the west, and it is evidently giving Tarara which we left this morning a good bath. But the SW wind seems to be holding it off from here. I have a fly set up in case it should come. Tide was high at Tarara yesterday at six p.m.

Under the tail of the departing storm which after all beat the SE wind we got away. It was practically dark at 7.30, and though the sky had cleared in the west the moon had no perceptible effect for the first hour. Vivid lightning flashes lit up the sky and momentarily blinded us, and between such the paddles dripped phosphorescence. Hour after hour we paddled and I must have dozed for I dont know when we reached the Jaro fork of the river. At midnight we entered Jaro creek at prectically dead low water.

on. Dec. 28. We [illegible] to Orville concerning her [illegible] we might get in touch with [illegible] company, when suddenly we came in and said he had just been listening to us. He cleared our business quickly and sent on my message to have [illegible] to come in at one o'clock. At one I picked up Pete and got [illegible] to the other end where I was able through the operator to get him on [illegible] line. [illegible] to me at the mouth of the Bai [illegible] [illegible] to get there to pick up upon the eighth of January. [illegible] last batteries are [illegible]. [illegible] the [illegible] generally without [illegible] of the collections which are being left for [illegible] to wind out.

Tues. Dec. 29. Full moon last night. Got everything down to the water [illegible] in readiness for loading. Tide still low at 5:30 but rose quickly. [illegible] for away from [illegible] at eight a.m. First [illegible] (r) 6.15; second [illegible] (1) [illegible] 8.00;

Our little [illegible] company [illegible] with Sonia [illegible] [illegible] [illegible]

Everybody was dead tired. We had traveled from 8 to 11, 1 to 4, and 7.30 to midnight, or 10½ hours.

Wed. Dec. 30. This morning is clear and fine again. It was a bit hard to get the boys started, everybody being a bit stiff and inert, but we got clear about 6.30. The tide had been running out for two hours already.

Picked up Gaindi the Jaro boy who is supposed to know so much about the country and to have so much influence with the natives. He had walked across yesterday from Tarara to take his wife back home before joining me.

Passed the mouth of the Jari River (not Jaro Creek) which comes into the Mai Kussa from the east at 7.00 a. m.

One of my two canoe boys is said to be mad. He may only have a cleft palate, but whatever is the matter he is not just like the rest of natives. He is a good-natured old fellow, a big man who seems to be getting bald - an unusual thing in a native, and he wears a frontal headband of cassowary plumes. He is a tireless paddler and yesterday proved to be a perfect tower of strength, taking the canoe up the last lap of Jaro Creek almost under his own power.

With that storm yesterday we got caught on a lee shore. We had had to go in there against the SE and tide, and besides it was the only possible place to get in through the mangroves. Then the west wind with its sheets caught us and rubbed the outriggers pretty hard against the mangrove roots. It was well too that we had put the big fly up. Even in that relatively small river a bit of sea was kicked up by the wind, so we'll have to proceed pretty cautiously going south down the main Mai Kussa from Sevidiru to Buji. We'll be going down the east shore I suspect. And thesse storms come on in the afternoons.

9 a. m. Have done well so far: 2½ hours down the SE arm to where the river turns east, and where the cross-branch (Awori Creek) cuts away to SW to join the Wassi Kussa. We are being helped a bit though by a light W breeze which catches our shelter fly and blows us along. The tide is of course still with us.

From the above we zig-zagged ESE, reaching Gija, the new village noted on the way up the river at 12.45, just at the time we began to feel the effect of the newly rising tide.

Our arrival created quite a sensation: Drums were beaten, boys started dancing around in a ring, shells were blown. Then the figure of the village policeman dressed in the conventional uniform appeared at the waterside to welcome us. I got a little house assigned to me and the boys yet another. After settling down a bit I took a good walk to look over their regualr water supply, which is a good mile away. In wet weather they get a little water closer. These people formerly lived at Bellivi which is now deserted, the policeman who came walking with me and speaks a few words of English, told me. The all-pervading limestone is here too. There is a much weathered exposure just at the landing. Took a lot of pictures of the people. They are planting taro, bananas, pawpaws, etc. right in the village still, also coconuts. But they have mature gardens which must have been set going some long time ago, as I bought about 50 lbs. of yams and bananas this afternoon. The present population seems to reach about 20 adult men and rather less women, few children, three or four pigs and a dozen lean dogs.

The country behind the village is fairly heavily "treed" tree-savanna. Saw large fan-palms and a narrow-leaved Pandanus, the latter bordering a drainage raving. Limestone appeared at the water place too. Noticed how some of these people are opportunists: a number of yams being roasted against a treestump in the clearing, thus gradually getting rid of the stump.

Thur. Dec. 31. Away at 6.30. Collected specimen of limestone.

6.40. Passed mouth of Romé River.
The tide at Gija seemed a bit queer. The bid high tide came last night about seven oclock. I looked out at 3 this morning and the water was dead low; yet here we are on a slightly falling or practi cally slack water which is certainly many feet deeper than threehours ago.

Quite a large number of fruit bats flew over Giza last night, traveling as at Tarara SW. Much too high to shoot at. No smaller bats seen, thought looked for.

Clearing the slightly winding stretches below Giza and the first part of the long N-S stretch at 9.40 a.m. The tide has been running up very slightly against us, but it should run out very soon and keep retiring until about two oclock or perhaps three.

Actualslack of the tide came at 9.30, but it hadn' started to run out when we reached the Large Lira River which comes in from the East after the islands and sea at the mouth of Mai Kussa had been sighted. The mouth is still some miles off, I reckon.

We tied up to some mangrove trees about noon to let a little squall blow over. Then pushed on with the little waves slapping the bows of the canoes to Azasako, about a mile and a half inside the mouth of the river. However as it was then 12.40 and the real afternoon tide was beginning to flow, moreover the wind stayed pretty fresh, I considered it better not to try to go outside to Buji (which faces an open roadstead), but to secure the canoes, more everythingashore that might be wetted by afternoon showers, and wait over two meals (noon and evening) for the wind to moderate, the moon to rise (it is only just past full), and for the big evening tide to start to ebb. If that works right we shall go around to Buji on smooth water, getting there around ten or eleven oclock tonight.

Azasako is a continuation of the limestone formation, more worn down and its cap of laterites more concentrated. The tides are cutting at the little ridge continually. The place appears quite old, as there are old coconut, mango and Poinciana trees here. It is at present deserted, and the boys are enjoying themselves with the mangos.

Saw several fragments of kangaroos skulls about the house.

5.45 Water and wind smoothed out and two hours of daylight yet, so decided to push on and try to reach our destination this evening. Got out to the low headland that marks the east side of the river mouth just at 7.30, then ran into a slight east wind which checked us but soon died down. Traveling east long the coast, with the island of Boigu invisible on our right, we at length turned into the little mangrove-fringed cove that marks Buji. Got there at 8.30. A couple of dim lights showed while we were off shore, but as we drew in close a number of coconut flares lit up the tiny village of half a dozen houses. It was New Years eve, and they were all set to celebrate. However most everything was put off.

Fri. Jan 1, 1937. At 5 oclock in the morning the New Years dance was heralded by drumming on a bamboo, gradually increasing the speed. Next the local inhabitants, about six men and six women paraded around the huts beating drums and chanting, occasionally breaking off to cheer. Four small fires had been lighted in a rectangle to give light. The moon was still bright, but I reckoned I'd finished sleeping so I got up. As daylight came the dance faltered and finally ended.

Got organized by 9 or 10: workshop fly up, work table made, things unpacked and arranged, kitchen affairs settled. A Petaurus and a large Uromys were brought in quite soon. Also have two of Rand's old boys skinning birds. Lots of ducks here in the swamp behind the village, also the regular run of kingfishers, leatherheads, small bronzy doves, etc.

Took a short walk out behind the village late this morning. Quite a lot of ti tree swamp, the whitish bark sharp against the green of the sedges which at present are gowing actively there. Beyond and slightly west of the swamp the ground rises just sufficiently for development of a mixture of rain and savanna forest to develop; and I do not doubt that regular tree savanna will be found close by. Locals say there are plenty of Macropus agilis, a fair indication.

This place would be very hot were it not for a rather pleasant sea breeze. We look directly out south at Boigu, and by going out on the west limestone point a second island Kusara is equally close in a SE direction. I went out to look at the rocks just after lunch. They appear much jointed, the joints having washed out clean in many places by the action of the sea. Must go out again and take the bearings of their strikes. Mangroves growing with their roots thrust down into the cracks in the rocks are apparently dwarfed. About a mile east there appears to rain forest close up against the sea.

Put on a little propaganda anent my buying specimens which almost at once bore results in the form of a young scrub wallaby (M. brunii). That gives us three species of mammals here without any traps set. Had 150 rat traps put out this afternoon. Also made up half a dozen birds for Rand including a pair of big kingfishers that I shot myself and whose identity whether Rand's new form or the old sort, I cannot decide.

Heavy rain with thunder and lightning came on at 5.30. How thankful I am that it did not catch us at any time yesterday. We just slipped through at the right time. I forgot to say at the time that coming down in the canoe, except at the hottest times of the day, sandflies (punkies) were persistent, apparently flying far and wide over the water. Just at dusk last night salt-water or mangrove mosquitos came out after us a couple of hundred yards too.

I've just witness a lovely sight: one of the locals giving a small white pig a bath in the rain -- washing it all over, and the piglet simply shrieking its head off.

Am entirely without tow and very short of cotton, so I am having ti-tree bark, papery stuff finely shredded up and using that to make bodies. It works well too on big things.

Sat. Jan. 2. The usual two south New Guinea savanna species were trapped last night, namely Rattus brachyrhinus and Melomys muscalis. Of the nine specimens of the former four were juvenals. One of the two males of the latter species was a young adult.

This place teems with mosquitos. Turned in very early, just after finding that there were flying bats to shoot at. Could hear the drums of the village just opposite on the island of Boigu sounding faintly across the water.

Today threatens rain. Having been living well on ducks which we shoot in the swamp just behind the village. Shot half a dozen birds for Rand's collection.

Suppose I'd better keep some bird notes here: The ducks gather in water about a foot and a half deep, about ten strong. They are very wary and rather hard to stalk. They do not appear to be breeding. The red headed blue parrot flew into a coconut tree, and sitting talking to itself whenI shot it. The pair of kingfishers with much worn plumage were on dead trees by a garden. Neither in breeding condition. Plumage greatly worn. The Black and white butcherbird was flying about among ti tree woods. The several little warbler-like birds with gray backs and yellowish white underparts live in the tops of the ti trees and make a weak twittering noise. The male and the two females all in breeding condition, one f. with an egg practically ready for laying. The leather head was shot whilepercched on a tree in the same clearing as the kingfishers. A boy shot the white cockatoo and the hawk. The former are common everywhere, often perching on dead ti trees out in the grass swamp.

Rain this afternoon.

At four oclock in the rain a number of small birds were flying back and forth between the mangroves and the coconuts. Shot seven of them and found that they represented three species. one a smoky brown honey-creeper, another a warbler (?), the third also a warbler(?), but with yellow on the outer margins of the wing feathers instead of plain brown.

Sun. Jan. 3, 1937. The locals threw a dance last night which began about seven and ended at ten. It simply meant that they shuffled or pranced around a couple of fires to the tune of their own very monotonous repetitive chants and the beat of their drums. Shot a Pteropus among a number that came winging in around the coconuts at dusk. Had put on my headlight to try for the eyes of a few more when I made an interesting discovery: A pair of eyes shone down from a coconut. I shot. And the anial proved to be a little flying squirrel (marsupial) Petaurus. Subsequently I saw three sets of their eyes, shooting two and losing one. A last animal was located and shot in still another coconut tree. So evidently Petaurus is accustomed to making its home in the crowns of the coconuts, probably feeding on the flowers and newly set fruit. This habit may well have been recorded somewhere, but clearly it is an acquired habit if the coconut Petaurus is the same as the ti-tree savanna one; and it certainly looks the same. I rather suspect the fruit bats came across from Boigu. Tonight I hope to watch for them. They should be easy to see if such is the case. They are long-eared, and quite different from those of The Fly River and Tarara. They look like the single one shot at Daru by Archbold, and may in reality be Australian.

Traps this morning (250 of them) brought nothing new: brachyrhinus and muscalis.

One of the local people has taken his dogs and gone hunting, so perhaps something new may turn up as a result.

Walked out this morning due north for about a mile to a large swamp bordered with ti tree; close by found some long-grass savanna dotted with big trees from a foot to eighteen inches diameter. Most of the country not flooded is covered with rather poor thin scrub with at intervals a really large tree two or three times the general height of the small forest. Shot a dusky honeycreeper, a black bird with grackle-like tail, a blue pigeon. Lots of plover around the swampy places.

The stomachs of the Petaurus contained a little of what appeared to be vegetable matter - probably the flowering parts of coconut.

The man with his dogs certainly got a result: namely a specimen of the wallaby I described last year with type locality at the Oriomo. This animal, a male is not at all badly chewed up. I have felt all along that the species should turn up along here west of Oriomo, and sure enough here it is. The insides of the ears are unpigmented, and the cinnamon legs and feet warmly colored. Its captor declares he got it out in grass country. And my two East Cape boys positively insist that this kind of wallaby occurs in their country, where there is "plenty, big grass", as well as the larger M. agilis. If this wallaby M. c. oriomo should occur beyond Moresby, or even in the grasslands of Moresby and Yule Island I should not be greatly surprised. After the specimen had been skinned I took the following measurements: length, ulna, 6 mm.; humerus, 50; tibia, 125;, femur, 100; epipubic bones, 25 mm.

I've been shown the tail of Dactylopsila the 3-striped marsupial squirrel. And a boy on learning that I would purchase such immediately set out to get one. It is just as though some stranger from say Mars came to Newton, N.J. and asked about woodchucks. A score of boys there would know exactly where to go any time to get one or more. And these fellows often know the exact tree in which to look for Dactylopsila.

Again this afternoon.

As I am looking in the rain a number of small birds were flying back and forth between the mangroves and the coconuts. Most seven of them and found that they resembled dwarf species. One a shoty brown honey-creeper, another a warbler (?), the little also a warbler(?), but with yellow on the outer edge of the wing instead of plain brown.

Sun., Jan. 9, 1977. The locals came to come last night which began about seven and ended at 9 p.m. I simply mean that they shuffled or tramped around a couple of times to the tune of their own very melodious relatively chanting and the beat of their drums. Not a [illegible] among a number that came winging in around the coconuts at dusk. Saw put on my headlight to try for the rest of a few more when I made an interesting discovery: a pair of eyes shone down from a coconut. A bird, the small proved to be a little flying squirrel and quite a fetching. Subsequently I saw three pairs of their eyes, shooting two and losing one. A last animal was located and shot in still another coconut tree. To evidently return is accustomed to making its home in the crowns of the coconuts, probably feeding on the flowers and newly set fruit. This rabbit may well have been recorded somewhere, but clearly it is an required habit in the coconut returns is the same as the tri-tree squirrel one; and it certainly looks the same. I rather suspect the fruit bats came across from Bolgan. Tonight I hope to watch for them. They should be easy to see if such is the case. They are long-eared, and quite different from those of the Ely River and Tarara. They look like the single one shot at Tarara by accident, and may in reality be Australian.

Tuesday this morning (6th or then) brought nothing new: brown-flying and macaqui.

One of the local people has taken his dogs and gone hunting, so perhaps something new may turn up as a result.

Hiked out this morning one mile north for about a mile to a large swamp bordered with trees, close by found some long-grass savanna dotted with big trees from a foot to eighteen inches diameter. Most of the country not flooded is covered with rather poor thin savanna with intervals a really large tree two or three times the general height of the small forest. Shot a dusky honeycreeper, a black bird with purple-like tail, a blue pigeon. Lots of flower around the swampy places.

One specimen of the [illegible] contained a little of what appeared to be yellow [illegible] - probably the flowering [illegible] of coconut.

The man who his dog certainly got a result: namely a specimen of the wallaby I saw on that year with type joe lily. [illegible] This animal, a male is not at all bobly one as up. I have left all [illegible] the species [illegible] [illegible] of [illegible], and [illegible] here is [illegible] [illegible] [illegible]

Yesterday afternoon I sent a messenger to Mabaduane to say to send on the sailing canoe at once. This gives me a second string to my bow in case Beach should have somehow slipped up. And besides I notice that in his telegram Beach says he is sending the canoe to Torji (on Strachan Island) instead of to Buji where we are. Now I hadn't intended going to Torji anyhow. The medical boy Kousa who is a native of Mabaduane asked if he might go along with the messenger and return to get his medical kit on the sailing canoe. He is a good boy and speaks and reads English well, so he may be able to hurry matters up. The boy who went as guide over the first part of the road returned this afternoon, so Kousa who picked up another guide in the fashion of the country must be well along by this time. The people here think he will reach Mabaduane tonight. If so the canoe may well come tomorrow or the day after.

A strong squall this afternoon, without very much rain.

Late this p.m. with the tide low I walked out to the west point of limestone, taking a compass to try to get bearing of the rock seams. The limestone however proved on closer examination to be so greatly and irregularly cracked that I could make nothing definite out as to its structural character. I could look along to the west and see Strachan Isl. Across the cove to the east I found that there is a similar point of limestone which I next visited. It was slightly lower than the west point but otherwise identical. Boigu and its two sister islands are almost certainly also made of this limestone, and rocks of the same material (in appearance) jut through the surface of the sea at low tide in a couple of places.

Just at high tide line the laterite nodules common on every elevated surface have been washed and rounded by the waves into a small beach of tiny smoothly rounded gravelly pebbles. I have seen no trace of the pumice so common at or just above the normal high water level at Daru and Old Mawatta. The laterite beach also occurs at Azasaco.

Mon. Jan. 4. Last night I walked out to the limestone point at dusk. Sure enough the fruit bats were coming across from Boigu. I suppose I must have seen fully fifty coming in out of the dusk across the water. Shot three, all males. Their flying is slightly more wheeling and dipping in character that that of the bigger bats of the Fly River, which seem to fly almost by compass.

With the jacklight I later saw four more Petaurus, all of which I collected. They dodge about among the coconut inflorescences, sometimes running out along the petioles of the great leaves. I have yet to see one fly. Shot one however back of the swamp in a ti tree, where it was sitting across a small branch. The eyes shine brilliantly.

In traps today a lot of R. brachyrhinus and M muscalis. Also a small Isoodon and a Phascogale. We are making up eighteen mammals today. Shot a few birds for the bird boys to work on.

My boys (the Island boys) put on a small dance of their own; I suppose to show these locals a thing or two. However they didn't come near eclipsing the local art. The best they could do was jump up and down either standing or squatting. They did have a wider repertoire with their borrowed drums however. Each "number" is very short, and is ended with a series of shishing noises followed by a grand roll of the drums. The local people courteously brought torches for illumination and for warming up the drum heads which to remain resonant must be continually dried out.

About 11.30 a big sailing canoe came tacking across from the Boigu side. It proved to be the one sent by Beach; they had stopped at Mabaduane and left again before Kousa my messenger had arrived, so we shall take along his medical kit and pick him up there. The canoe to avoid the strong westerly storms that come in the afternoons has gone up to Gija but will come in again this evening. We shall leave in the morning.

Yesterday afternoon I went a passenger to Bocas del Toro to say to send on the sailing canoe at Cove. This gives me a second airing to my bow in once Sunset around here somewhere already up. And sailing. Notice that in the telegram Isaac says he is leaving the canoe to be for it (on strength) instead of to will where we are. Now I don't intend going to Bocas now. The medical boy found who lives nearby or Bocas where I might go along with the messenger and return to get his medical kit on the sailing canoe. He is a good boy and speaks and reads English well, so he may be able to hunt medicine up. The boy who was staying over the first part of the trip had returned this afternoon, so Jones who picked up another going in the fashion of the country and he will stay with the time. The people here think he will reach Bocas tonight. If so the canoe may well come borrow on me day after.

Along small this afternoon, without very much wind.

Late 3:30 p.m. with the tide low I walked out to the west point of Hassone, taking a compass to try to get bearing of the rock reefs. The fish alone however proved on closer acquaintance to be pretty and interesting creatures and I could make nothing definite out as to the structural character. I could look along to the west and see Bluefish Island across the cove to the east I found that there is a similar point of limestone which I had thought. It was slightly lower than the west point but otherwise identical. Going out in two a bear islands are almost certainly pieces of this limestone, and rocks of the same material (in appearance) are thrown the surface of the sea at the in a cousin of places.

Just at high tide line the lateritic nodules common on every elevated surface have been washed and rounded by the waves into a small beach of tiny smoothly rounded water-worn pebbles. I have seen no trace of the nodules on common or just above the normal high water level of the sea and in small. The laterite begins also south of Amazon.

On. Yes. A. Just right I walked out to the limestone point it that. Was enough the fruit bats were coming across from Bolen. I suppose I must have seen fully fifty coming in out of the dusk across the water. Not three, all males. Their flight is slightly more wheeling and zigzag in character that that of the pigeon but is the fly river, which seem to fly almost by compass.

At the moment, I think I saw four more returns. All or union collector. They come out among the coconut inflorescences, sometimes running out along the petioles of the great leaves. I have yet to see one fly. Not one leaves back of the crown in a tree, where it was sitting across a small branch. The eyes shine brilliantly.

In trees today I got a Procyonidae and M mustela. Also a small Iguana and a Dasyprocta. We are feeding up eight-eyed mammals today. Not a few alive for sketch book to work on.

Monkeys (the Ia and boy) put on a small dance of their own; I guess to show these Indian a thing or two. However they didn't come near collecting the local art. The best they could do was jump up and down either starting or ending. They did have a minor repertoire with their borrowed drums however. Each number is very short, and is ended with a series of shrieking noises followed by a scramble off of the drum. The I get people countenance through torches for illumination and for turning up the drum heads which to remain resonant must be continually dried out.

About 11.30 a big sailing canoe came tacking across from the Bolen side. It proved to be the one with by beeson, they had stopped at Changuinola and left again before noon by passenger had arrived, so we shall take along the medical kit and give him up there. The people to avail the strong sea-sickness I come in the afternoon I go on up to Bocas but will come in again this evening. We shall leave in the morning.

Another specimen of Macropus oriomo just brought in; this time a female. Very pleased to get these animals. A very large male Macropus agilis represents that species too. So with only four days collecting I have no less than nine species of mammals to show; we have, I think from twelve to fifteen species of birds.

Some measurements of the above two species are as follows:

	M.agilis, male	M.oriomo, female
Tibia	260 mm.	135 mm.
Femur	230	115
ulna	165	87
Humerus	145	78
Epipubics	70	57

The last mammal to be taken by us out of Buji was an adult Isoodon which at some time during its life had lost its tail. It had two young in the pouch which were about half grown.

Got most everything packed up and ready for a start around moon-rise.

Tues. Jan. 5. Made a beginning of getting away at two a.m. I had a cup of coffee and a bite of kai while the boys were loading the gar onto the which I found upon trial to be nearly half a mile out through shallow, knee-deep water and ankle-deep mud. However we were actually under sail by three oclock. These native sailing canoes are quite wonderful craft: With a hull made of a single huge log hollowed out as a starter, they build up a high freeboard with heavy timbers thus adding at least a foot to the clearance. Then double outriggers are fitted each outrigger carefully shaped to a torpedo-like form. And finally, at least one mast (in our big canoe two) is stepped and rigged, both masts being stayed out to the ends of the outriggers. We carry three sails: jib, foresail and mainsail, and we go like the Dickens in the merest whisper of a breeze, and close into the wind too. I should have said that the outrigger crossbeams are slightly up-arched so that only one of the outriggers rides on the water at a given moment.

I sat for a while on the big platform that is built on and out over the outriggers, but soon decided to have my cot opened and get some more sleep.

This morning we stopped for a few minutes by a broad, shelf-like extension of the shore limestone which came out from the shore forat least half a mile and must have reached for a couple of miles. I got hold of a couple of pieces of limestone from it: the selfsame kind of rock that we have been finding all the way out.

The native captain of the canoe who has sailed all around the Straits declares that Mabaduane, Dauan, and the rather distant Darnley Island are the only places known to him where granite occurs.

The limestone shelf lies approximately NW of Dauan Island, and E of the Boigu group of islands.

4.15 p.m. We are within a short distance now of Mabaduane. First calm, then head wind from the SE int which we had to beat delayed us. I reverse my statement made above about these canoes being good sailers into the wind, though.

A series of a bout ten slight points with shallow bays between them about ten miles apart mark the south coast. Dauan has a shelf to the NW that looks suspiciously like the old limestone . Saibai is almost surely limestone. Along its northern side are about seven slight rises ending in points with very slight bays between them. Near its western there is a slight downwarp, where the village has been located. The island group Three Brothers far south (at least one of them) is also granite. The little island Sogeura is also formed of ganite.

A head wind all the way and the tide later setting against us delayed our arrival at Mabaduane until about 8 p.m. And to cap things we ran aground about 300 yards out but within shouting distance. A small canoe

drawn by half a dozen people wading came out and my bed and cooking gear with two boys were loaded into it (and I too). Ashore I found a celebration going on in honor of the return of the pearling crews from the pearling fleet at Thursday Island. The men danced and sang while the women stood around looking on and holding palm leaf flares to light up the scene.

Kousa the medical boy who left me at Buji to walk to Mabaduane was in the thick of it. He said he arrived Sunday afternoon, and wants to take his box of tricks and cure a few people at this village before coming on to Daru. As far as I'm concerned he may, but I believe he has orders to return with me just the same. Prabably the festivities are the attraction.

The island between here and Saibai appears to be limestone; west and SW of it there are two lots of rocks that probably mean the remains of two other limestone islands; right under us now and within a couple of hundred yards of the granite the sea bottom appears to be limestone.

Wed. Jan. 5. Up before dawn and had coffee to the tune of several millions of mosquitos, the latter having roused the boys in their house even earlier. I stayed in the government resthouse which Brass and I occupied early last year. Packed up and got on board as quickly as possible. Have to wait a while for the tide to rise.

A mild east wind blowing which would make tacking necessary. However before tide had risen a heavy rain and wind storm came down from the west. Too strong to risk the old sails of the canoe in. When the storm had nearly ended and tide reached high (about noon), we got away, actually leaving at 12.30. The west wind had softened to a nice breeze which the tide hurried us along finely. But by two we were once more becalmed , but we still had the tide which runs east at about a mile andhour. Just about stopped off the Binaturi River until 6.30 when a fine wind from SW sprang up and we ran up to within sight of Daru. There the tide turned once more and the wind died away. So I got out my cot and turned in. At 2.30 a.m. actually we anchored off the dock to wait till morning.

Thur. Jan. 6. I learn from Beach that the "Royal Endeavour" is expected in today, and will sail again tomorrow. So I'll have to make speed with repacking, etc. to catch her, but the chance of getting speedily to Moresby is not to be missed.

Went out to dinner at Doctor Vernon's. Played "Pontoon" afterwards.

Fri. Jan. 7.

Put final touches on packing and sent the cargo and boys down the wharf to go on board early.

Went around saying bye-bye to everybody. The "Royal Endeavour" finally got away at about 1.15 p.m. We call at a number of the gulf ports and first of all go into the Fly River once more to Mibu and possibly to Madiri to load copra. We anchored for the night some ten miles off Paramma Island in four fathoms of a water and sufficient chop to make me retire to bed without supper.

Sat. Jan. 8. Away at 6.30 and up the Fly between Kiwai and Mibu Islands, finally around the top of Mibu and down the NW side to th3 creek where the Cowling plantation is to pick up copra. The "Goodwill" was lying at anchor there, and Gordon was up at the house. He asked us to lunch after which the business of loading copra began. About five oclock we saw Luff's boat the "Aramia" coming up the river and he came to a halt too - prabably the first time that three boats have ever been at Mibu at one and the same time. Luff went ashore with Gordon for supper while the skipper Johannsen and I had ours on board.

Jan. 5, 1970

Dream by half a dozen people banging close out the my bed and shouting [illegible] two boys piled down into it (in it too). Aborsel found a [illegible] bloom waiting on in honor of the return of the [illegible] crews from the [illegible] fleet at Murray Island. The men [illegible] while the women stood around looking on and [illegible] palm leaf fans to light on the scene.

Hours the medical boy who left me at Ewll to walk to [illegible] in the thick of it. He said he arrived Sunday afternoon, and [illegible] take his box of tricks due [illegible] a few people at this village before coming on to [illegible]. [illegible] conquered by [illegible], but I believe he has orders to return with us just the same. [illegible] the festivities are the attraction.

[illegible] between [illegible] to be limestone [illegible] and [illegible] it there are lots of rocks that probably mean the [illegible] or two other [illegible] under it [illegible] and [illegible] a couple of hundred yards of the [illegible] bottom [illegible] to be limestone.

[illegible] up before dawn and had coffee to the tune of several [illegible] the lady [illegible] boys in their [illegible] hours even earlier. [illegible] the government restrooms which [illegible] I acquired [illegible] year. Access up [illegible] to [illegible] possible. [illegible] to with [illegible] for the [illegible] to [illegible].

[illegible] easy [illegible] which [illegible] more [illegible] [illegible] however [illegible] [illegible] a heavy [illegible] with [illegible] [illegible] [illegible]

Sun. Jan. 9. A blustery morning with strong NW wind and driving rain. Rain cleared later. Left Mibu at 11.10 a.m.

Mon. Jan. 10 Arrived Orokolo 11.10. Left at 3.30 with Mr. Stewtley on board. He is a London Missionary Society man, a young fellow who is going in to Moresby to marry an English girl who has come out for the purpose. They are going for their honeymoon to Rona Falls (I think I should give them some traps). Reached Araimiri about 5 oclock. Anchored. We have to pick up another passenger here, a Mrs. Williams also going to Moresby.

Tues. Jan. 11. A very quiet night at anchor. The place where we last stayed, Orokolo, ison the open beach in a very shallow bay. Entirely fronted with coconuts, but with quite low hills justbehind about half a mile back, hills only a hundred feet high, I should say. Beyond, Stewtley says, it gets flattish before the big hills are reached. Apparently rainforest. A couple of miles to the SE is the mouth of theVailala River with a huge fan of muddy water extding out from its mouth.

At Araimiri, a coconut plantation, the immediate front is flat, rainforest country, with a range of rather rugged-appearing hills behind which runs nearly due south and fronts on the sea to the E of our present anchorage where it forms a bluff headland. These hills appear to reach a couple of hundred feet. All dense covered with rain forest. Bigger hills (2 - 3000 feet) are visible behind.

11.15 a.m. Approaching the flats about the mouth of the Lakekamu River. A fairly distinct point to the NW behind which we have left the village Araimiri and the Vailala. The point composed of low rugged hills, mostly in second growth, and more or less detached from the mountains farther inside. The main mass of mountains reaching perhaps 4000 feet, lies now about N or NE of us, and forms chief divide between the Vailala and Lakekamu River systems.The coastline from the point just mentioned this side of Araimiri and the mouth of the Lakekamu is lined with an almost unbroken fringe of coconut groves and villages half hidden amongst them. All is apparently rainforest country.

Dewdley's (not Stewtley, as written above) boys recognize among mammal skins I have out drying on deck the following: Uromys, Petaurus, Rattus, bandicoot. They do not know Dactylopsila and Macropus brunii.

We got away from Araimiri at about 6 p.m. owing to delay caused by the loading of three bullocks. A big mass of mountain, cloud-topped between E and NE.

Wed, Jan 12. A guba struck us at one in the morning and we tossed about all over the shop. The storm gave place to strong NW over a heavy swell from SW, making a cross sea which lasted until cut off by Cape Suckling.

This morning course about E. Yule Island and behind it Mt. Yule passed about 9 ock. Country eastwards including Yule Island itself very dry and wi hout forest. Low scrub or grass-covered hills a few hundred feet high just back from the coast. Cape Suckling low and flat, arid, backed by same low hills. Dry continues at least to the mouth of the Aroa River.

Stopped from about ten a.m. to 5 p.m. at Hissiu, west of mouth of Aroa River unloading timber. Made Redscar Head and anchored in its shelter (SE of it) for the night. The headland, Varivari Island and the Dareba Hill (500 ft,) close by with the intervening lowlands all dry country like that of Yule Island and Port Moresby.

Thur. Jan. 13. Left anchorage abt 5.30. Wea. fair. Reached Moresby at 8.45 a.m. Rest of day settling down.

Fri. Jan. 14. Mapping course up to Astrolabe and on towards Kokoda. Saw Armit and O'Reilly of maps dept. Also Worth, same office. Later saw Williams, anthropologist who has been over the trail. Saw Frame about going up to Itiki rubber plantations and getting mule transport. Started laying in stock of equipment. Rather hope to get away Tuesday next.

Sat. Jan. 15. Living in half bungalow with the Dixons. Room to unpack and get organized. Long talk with Boileau and Townsend. Visited Mr. Armitt and his sister Mrs. Lee. Both interested in nat. hist. Armitt has story of a colony of flying phalangers living among vines and vegetation along a cliff face at Awarra, upper Musa River, Northern Division. Local people feed these squirrels, bring yams and sweet potatoes, etc., call them out to get the food. Then once in a while they kill a few off for food themsleves.

Shipping the main lot of baggage and three boys tomorrow up as far as Rona. Expect to go myself the day afterwards.

Sun. Jan. 16. Shipping tomorrow; going up to Rona myself on Tuesday.

Closing this letter,

Port Moresby Jan. 16. 1937. — I have just closed letter 25 & still have the typewriter in Moresby during the Sery inv trip. Am Resetting the aneroid: Former setting zero meters level with 74.5. New setting: zero meters level with 73.8 (at 4. p.m.).

Sat. Jan. 19 - Talked with Armitt & his sister Mrs Lea this a.m. about a small Phascogale which they once had in captivity. In the evening dined with Mr & Mrs J.E. Williams & bridge afterwards.

Mon Jan. 18. Sent 3 boys & most of cargo up to Rona. In evening went out to Boileau's house.

Tue. Jan 19. Took other 2 boys & baggage & went up to Rona by B.N.G. lorry. Misty & fine rain. First boys had trapped R. mordax & melomys leviper

An aneroid at Rona (2 pm) 340 meters (70.55) = 11-12.00 ~~1700~~ feet. Walked up to the knoll where the authoress Beatrice Grimshaw once had her house. A wonderful view of the falls from there. The Umbrellatrees in bloom along the road & hillsides, their inflorescences red. We had supper at Mrs Armstrong's house — passion-fruit pie with cream for dessert !!!

Wed. Jan. 20 windy morning - overcast - clear out at the coast. Traps: 3 (2 R. mordax & 1 Phascogale).

The Phascogale may be new. Fully adult male, but of very small size. The ears so notched as to appear double-lobed - Very unlike the common species of the grass lands - This one taken up ~~on the grassy hillside~~ ~~near forest edge~~ ~~east~~ of the house. Its measurements & proportions unlike those of any I have caught so far. (length a large boulder.)

Went up the hill east into the forest which grows at the base of the agglomerate cliffs to superintend the laying of a line of traps. Plenty of signs of wallabies, also of what may be Phalanger leucippus - namely scratched & chewed bark on the shrubs & vines that twine among cracks in the rock. Saw no bats however.

Later in a.m. went to top of bluffs S. of us. Top very rough with a cover of grass & eucalypts.

Thur. Jan. 21. Fifteen specimens today; 11 skinned. Three species of Rattus here. R. mordax with mammae ? 1-2 = 6; R. brachyrhinus, 3-3 = 12; R. near praedor, ? 2-2 = 8. A young Uromys in steel traps. Two Melomys levipes badly cut up by traps & ants.

Picked up traps in p.m. but the mules did not come after all. So we had to wait until next morning.

Fri. Jan. 22. Got away with the mule-loads about 9 a.m. Reached "the depot" at about 10.30 & waited for the Ford truck to take us on to Itiki. Truck came with a load of rubber done up in bales of 100 lbs each about 11 o'clock. We loaded up & started off, reaching Itiki at 1 pm.

Road soon leaves the savanna & eucalypt country & enters what formerly was heavy forest but is now converted into clearings, pastures & rubber plantations. Passed a very fine house (Koitaki) owned by Sefton. Numerous gates along the switchback road to confine stock. Soil slippery red earth. Quantities of Kurukuru grass in clearings & along roadsides.

Was met at Itiki (B.N.G. Co), very large rubber station. Mr Godson (in charge) was away. But met Mr & Mrs & Miss Brewster and Mr Cay. The latter invited me to stay at his house where I temporarily now am, at least until I get my bearings. Too late after getting over a large ridge to Cay's house & carrying baggage across for boys to get traps out.

Sat. Jan. 23. Fair weather.

Barometer 8 a.m. 450 metres (69.55) = 1500 feet.

The boys did fairly well with their trap-lines: a lot of R. mordax, 2 R. praelor, 2 large reds melomys, 1 Phascogale melanura, and a slim-footed rat that I do not know (no. 3435).

Cay had an invitation for us to go to lunch at Eilogt, a neighboring rubber estate. We rode over about 10.30. The actual owners of the estate Mr + Mrs Lowdens are away south but we met the two superintendents Messrs. Hurley and Inathley, the latter a Canadian from Saskatoon, and Mrs (Ma) Wright who has lived all over Papua + has had much to do with the history of the territory. She is another Mrs Cowling + related how she once "knocked a boy out with a chunk of firewood + knocked him back again with a pail-full of cold water". She is now housekeeper for the Lowdens.

Rain came on in the middle of the day, lasting on + off till night. We got back about 5.30.

Forgot to say that in p.m. yesterday I walked along the crest ridge due E. from here + up onto the large hill top that overlooks the entire middle Kemp Welch valley. Oaks were reached about 2/3 way up. Also a cedar-like tree (only one though). Six patches of Kurukuru grass on flats along the ridge crest, a deserted shelter at the 5th. a good deal of moss on ground + trees; quantities of trailing bamboo. Lots of trap places. Probably I went up a thousand feet.

Mon. Jan. 25. Barom (7 am) 455 m. (69.5 cm). Catch fell off to 3 – probably the rain had something to do with it. Both new.

Went to see Aia's + Taikuda's trap lines. They run through a small patch of second growth + into the

densely forested ravine in the bottom of which the principal stream of Itiki flows. The sides of the valley are dotted with large boulders buried in the forest, with the roots of trees climbing here & there over them. Plenty of good trap-indications. A few leeches. We are working the hollow trees for bats this morning. So far I have not seen or heard a single bat in Itiki.

The two old type localities Sogeri & Haveri are virtually synonymous, being only a mile or so apart & in identical forested hill country. Itiki and Eilogo are parts of the same. Sogeri besides being applied to the head quarters valley of the B.N.G. Trading (rubber) Co is used for this entire rubber district — so any animal with type loc. Sogeri or Haveri which I may catch here can be designated a topotype.

The Phascogale melanura caught yesterday came from a trap in second growth only some 50 feet above the Itiki River and on gently sloping ground.

Tues. Jan. 26. Last night went up the ridge track with head-light. It was bright moon light & I never saw a thing — nor heard any animal except frogs and a skink.

A boy brought in two animals from the Sogeri pasture & meadows: a Melomys allied to musculus, probably introduced with open country conditions; and a young ♀ of a bandicoot — probably Echimypera.

This also makes 6 specimens: two topotypes of Melomys leucopus, another Phascogale melanura, two Rattus mordax and a half grown R. praetor. Went over to see Godson, manager of the Estates here. Have arranged to move to the Gov't Rest house a mile W of the rubber factory. It is just across the river & on a low ridge surrounded by forest — looks like a good location. I shall move on Thursday.

This afternoon my steel-trap boy Lira brought in a small Pseudocheirus which I so far fail to recognize. Its general color is brownish gray with faint dorsal stripe, a well defined narrow frontal stripe colored blackish brown and around the bases of the ears the same color. The boy found a large tree with a hole in it the size of an orange, rather high up. He went up & found the cuscus inside - for further data see tomorrow's notes.

About 5 pm. a station boy brought in a ♀ Petaurus. This animal is probably P. papuensis papuensis. It was caught in the woods nearby.

Wed. Jan. 27. Today 2 Rattus mordax and 2 R. praetor. The Pseudocheirus proved to have three well-grown young in the pouch. Also only three functional mammae, the fourth being undeveloped (probably present but I could not find it). Moving across the estate to Sogeri tomorrow.

Thur. Jan 28. Picked up traps; 4 R. mordax but did not keep them. Moved across to the Sogeri Rest House with the help of six of Gobson's boys. Spent most of afternoon settling in. The rest house is a couple of hundred yards N. of the river on a low ridge.

Fri. Jan 29. We put out only a few traps yesterday. Catch 4: 1 R. praetor, 3 R. mordax.

Had to go over to the estate storeroom in the morning; in the afternoon I plodded up 500 feet to a native village on the ridge NW of us. Nobody was at home except two cats. All traps are now out (350 of them), so we ought to get a considerable catch tomorrow. Two species of bats were flying in the clearing last night, but I did not succeed in shooting even one specimen. Hope to get them though.

Sat. Jan 30. Last night we were all set for the bats: four boys each armed with bamboo sticks to try to knock them down, and I with the shot gun. Only one was taken + unfortunately I blew it practically to fragments. I could recognise it as Pipistrellus tenuis.

Trap yield, 15, but lacking variety: one more topotype of Melomys leipes, the rest Rattus mordax + R. praetor. A steel trap yeild one fort only of Phascogale ~~Chiropotes~~ ~~Phascogale~~ ~~one of the~~ (see p 8 rare arboreal species that I want especially.

One of my Dergusson Island boys gives me the following notes on Dergusson Isl. mammals (to be taken with a little salt of course): –

Present	Absent
bandicoot sp.	Phascogale.
gray cuscus	Dendrolagus
Dactylopsila	Phal. maculatus
Petaurus	Mac. brunii.
("tree bandicoot")	Dorcopsis
Macropus agilis	Zaglossus.
Rattus	
Melomys.	
"big rat"	
Chiruromys	
Hydromys	
"? Pteropus" (from a Dergusson mountain boy)	

Went over to see Johnston after lunch. He is another of the rubber estate overseers. He presented a native skin of Dactylopsila.

At 4.30 one of the locals (Korari) from the Village of Agimam (which I visited yesterday) brought in one of the rare tree rats (Pogonomys lepidus) which I am so anxious to obtain. The specimen is a female

but I was unable to make out the mammary formula. Though an arboreal mammal, it was caught on the ground.

Tonight's bat haunt gave us Pipistrellus, (the same that I blew to shreds last night), knocked down by one of the boys' sticks. Apart from our Western Division material it seems to constitute the first record for Papua; certainly it is so for the Central Division.

Going over our newly collected C.D. material I find we now have: Rattus, 3 spp.; Melomys, 2 spp, Pogonomys, 1 sp., Uromys, 1 sp., an unidentified rodent, Uromys, 1 sp., – these are the rodents; marsupials: a bandicoot, Pseudochirus, Petaurus, a wretched native skin of Dactylopsila, and Phascogale, 2 spp.; bats: the Pipistrellus only. Total: 16 species. Of these four only are topotypical.

We have just been visited (8 pm) by an old Korare named Kowkow with his entire retinue of about 3 men & 3 women. The village on the hill which I visited yesterday is his. His distinguishing badge is a derby hat painted all over with silver paint. He is said never to take it off.

Sun. Jan 31. Nothing new in traps: R. mordax, R. praelor and M. levipes. Sent Gorono + Cia out shooting – no results however. This p.m. Johnston came over for a chat. Cia got a Hipposideros (probably pallidus which we want) out of a tree this afternoon, but he burned the tree, & the bat is pretty badly damaged. I'm keeping it just the same.

Last night Kowkow said that the Kangaroos might be found at Inorokau on the Musgrave R. S.E. of us.

This evening's bat hunt brought us one more desired topotype, namely Nyctophilus microtis, – at least I think it's that, and Sogeri is type locality for it. We lack Rhinolophus fallax from "Ighibirei" which may be Magiberei. If so it is quite close by but in Eucalypt country above Rona. Two other bats Saccolaimus mixtus and Phonisacus papuensis have Port Moresby as type locality. Unfortunately "Port Moresby" may indicate some place back in the bush or it may be right.

I can't hit these bats with the gun. They are too swift & too erratic, & fly so low that they are generally invisible to me against the brush & trees. The 5 boys keep their sticks swiching back & forth & connect with somethg once in awhile. Have seen no fruit bats anywhere as yet. Night jacking the other night I saw the eyes of either Nycteris or the small Dobsonia on the wing (the former, I think).

Went jacking but never saw an eye.

Mon. Feb. 1. Heard bats flapping their wings up in the roof of the house, a grass thatch – but when I scratched on my light could not see them. Time: 1 a.m., moonlight.

Traps gave good results: 3 R. praetor, 2 R. mordax and another new(?) Phascogale. A member of the murex group but seems very much larger. Incidentally, the foot referred to (p. 6) was of this species. The animal looks very much like one of the South American Metachirus. It was caught in forest at the foot of a hollow tree with a steel trap baited with meat (rat carcass). Also another specimen of the rodent taken at Itiki (#3435). I suspect that these are

Sternops verecundus. May have slightly spinous dorsal hair, the wrist & forearm white, hands & feet long & slender, white, rostrum long. Unfortunately the ears of both are mutilated by ants, so I can tell nothing of that part of the creature. Both are males. The type locality of the species is the Aroa River. The terminal 1½ to 2 inches of the tail is white.

Marsupial bones of Phascogale near murex 18 mm.

Called upon the Godsons again today as I wanted to phone Moresby. They prove to be more affable than I thought originally – at least I was asked to have a drink & we had a little social chat. Brewster had his brother from Robinson River visiting him.

Kuranda has a touch of fever this p.m. Dosed him & made him lie down. He seems to be no better this evening.

Tu. Feb. 2. A very chilly night. Bright & clear, & this morning the mist rising in all the valleys.

Catch again good: 3 Melomys leucopus, 1 Melomys large arboreal, 4 Rattus praetor, and a Vespertilionid bat of genus unknown to me, knocked down with the flat of a knife as it flew at dawn back & forth along a stream bed in the forest. It has a transverse nasal ridge, large interfemoral membrane & long tail, ears rather large, a flattened process on the calcar. It is a female. The arboreal Melomys is related to or perhaps the same as a form we used to take up the Sly R. It was trapped by the creek side.

Out this morning looking for hollow trees to burn sulphur in on the chance of getting more bats. All but two trees seen in 2 hours walk were uncommonly healthy, and the two with holes contained no bats.

End of L. 26.

Tu. Feb. 2. Fast closed L. 26

In fm. a pointed-eared bat smoked out of large tree with sulphur fumes. This is the same as the one taken on Sunday, but it is complete (the other had its ears burnt + I couldn't tell their shape). It is also the same as specimens taken at Stuart Island (# 3005, etc). If this is H. d. pullatus I feel sure that it must be regarded as a full species, distinct from H. diadema which I know fairly well. Probably however it is not, + in that case we have still to collect the topotype of H. d. pullatus.

The Astrolabe Range fauna so far secured by us is as follows:-

	Type loc.	Taken by us at
Phascogale melanura	Morokai	Itiki
" rona	Rona	Rona
" n. sp.	—	Rona
" near murex	—	Sogeri
Perameles broadbenti (jaws).	Goldie R.	Sogeri
Isoodon moresbyensis	Port Moresby	~~Tamata~~, Rona
Phalanger brevinasus or matsika	Angabunga R.	Rona
Petaurus papuanus	NE.	Itiki
Dactylopsila trivirgata	Aru.	Sogeri, Rona
Pseudochirus forbesi	Sogeri	Itiki
Macropus a. papuanus	Yule Isl.	Rona
Hipposideros sp.	—	Sogeri
Pipistrellus sp.	—	Sogeri
Nyctophilus microtis	Sogeri	Sogeri
Vespertilionid bat.	—	Sogeri
Rattus mordax	NE	Sogeri, Itiki, Rona
" praetor	Solomon Isl.	" , " , "
" brachyrhinus	mouth Angabunga R.	Rona.
Steromys verecundus (?)	Aroa R.	Itiki, Sogeri
Melomys levipes	Haveri	Rona, Itiki, Sogeri
" naso (?)	Kapari R.	Itiki
" cutillus	Angabunga R.	Sogeri (grass land)
" new bruijnii (arboreal)	Arfak?	Sogeri
Uromys prolixus	Haveri	Rona
Pogonomys lepidus	Haveri	Sogeri

We still lack: Phalanger maculatus, Pseudochirus avarus, Dendrolagus dorianus, Pogonomys forbesi and P. loriae, + P. lamia, Rhinolophus fallax, Hipposideros d. pullatus, - seven species. Also I understand that Zaglossus and fruit bats occur,

(over)

See p. 12

From the highlands connecting the Astrolabe with the great central range — highlands bounded on the SE by the basin of the Kemp Welch R. and on the NW by the headwaters of the Goldie and Brown rivers, — I hope to get: Uromys anak and Crossomys monckton which have their type localities at Efogi and Sengina, both on headwaters of the Brown River. And in addition I ought to get many valuable new records.

A second specimen of Melomys lutillus? has just been brought in by the grass-cutters. (allied to M. muscalis)

Tonight's batting (literally, because five sticks were swishing about all over the clearing) brought us a second specimen of Nyctophilus microtis, also a female. The folding of the wings of this bat appears to me peculiar and I have tried to preserve it in the skinned specimen.

This ends our fifth collecting day in Sogeri and in that light of time we have taken 42 mammals.

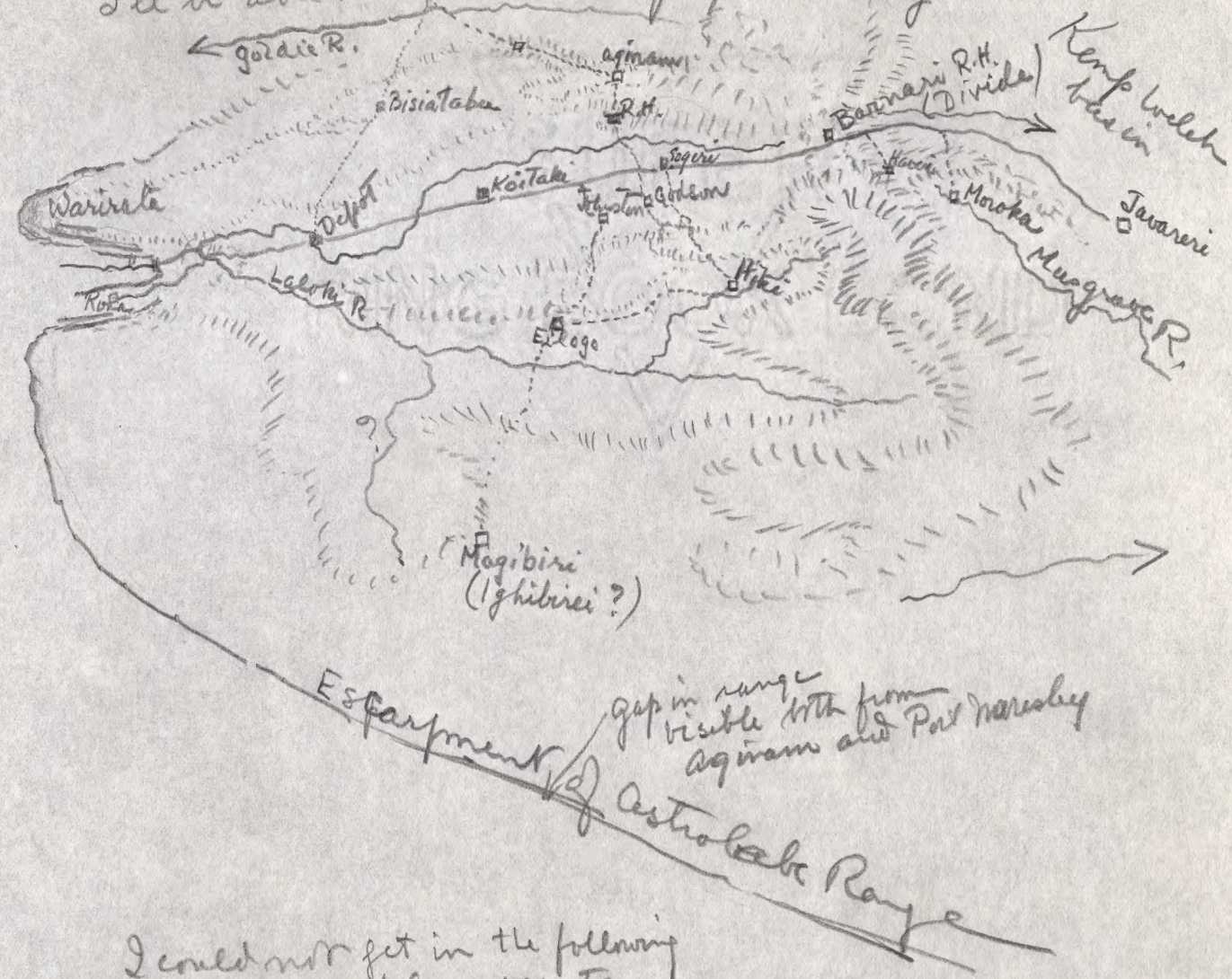
Wed. Feb 3 — Flying foxes about last night just after midnight. I went out twice with light but could not see them. Moon rose at 1 A.M.

Catch: 1 Melomys leniper, 1 M. lutillus (= muscalis ?), 1 Rattus praetor.

M. lutillus was taken NE of camp in a grass-filled clearing formerly a Koiari garden place. There is no doubt it invades open spaces as soon as forest is cleared & gardening abandoned. The Sogeri pastures are now very extensive but rain forest was destroyed ~~only~~ less than a score of years ago in order to create them. lutillus is apparently common in them now.

After lunch went up again to Aginam village, this time to find one man and a lot of women & children at home. The old fellow pointed out several localities to me (see next p.) and showed me the road to Uberi. The village, which stands on the very tip of the ridge affords a wonderful view of the country all around (exc. NE). The Koiari seem a happy crowd. A few years back they ~~had~~ a

reputation as sorcerers. They are an independent tribe however + if the Efogi boys don't come I doubt they meet whether I'll be able to induce these people to carry.



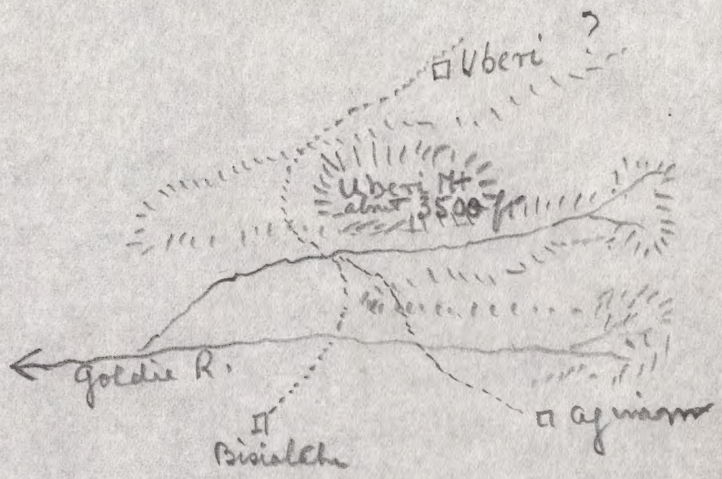
Escarpment of Astrolabe Range

gap in range visible with from Agiwam and Port Moresby

I could not get in the following features which belong at the top:

Scale roughly:
1 mile = 1 inch

See also p. 12



I walked along from Agiwam to the little settlement of Koiari (no one at home) to be seen on the sketch map at the

W. end of the ridge. Oaks growing along the ridge which I reckon as about 2000 feet.

The Magibria region looks like a patchwork of forest & grass country, the forest mainly in the valleys.

Saw one of the plantation boys with an Isoodor which he had killed out in the grass. It was badly cut up.

We tried a new stunt: four boys armed with light, branched sticks walked along the track ahead of me waiting for bats to fly through the beam. Several did but not one was hit. Then we tried a stationary beam with the boys lined up alongside it. Only one bat came - & it left unharmed. A further exasperating thing: The tree-tops were full of large bats (we could hear the beat of their wings), but I could not get even a gleam of an eye in the light.

Light rain began 9 pm.

Thur. Feb. 4. A poor lot from the traps, even though adding a species to the collection: Melonycteris lewipes juvenal, the new one (for this locality) Echinypera (juv.)

Started out with a tracker to look for a bat cave up the hill east of us. Worked up onto main divide between Lalokis & Goldie river systems. Plenty of big trees & plenty of holes for traps. At 650 meters track leaves the crest of the ridge and dips down into the ravine where bats have. First continued to top of hill which forms one side of the pass over to Kenpo Valley (the hill I climbed from Itiki forms the other side). The summit was reached at 820 meters (2650 feet). Trees near the top a bit smaller but still dense enough to cut off the view, only scraps of surroundings could be seen. Some big rocks near the top of the prevailing agglomerate.

Returned to 650 pm. and then steeply down into the main ravine of the Goldie. The bat "caves"

have been formed by water clearing out the debris from around enormous blocks of agglomerate which fill the bottom of the ravine. I had expected small bats & was armed with a torch &c. Instead there were four big Dobsonia. Clinging to the rock somewhere inside, & evidently very shy, for they flew away before we fully realized what was happening. The noise of our descent of a particularly steep, slipping place apparently startled them. The altitude of the "cave" was 550 metres. Now my boy Aia knows the place I shall send him over the ridge again to see whether he can surprise them. Tomorrow I'm going out again – this time south, after another "cave".

Mario the police boy was here when I got back. He reports that his messenger did not go through to Efogi. So I'm going on with the rest of my plans & hope he may have someone to carry when I come back from the Kemp Welch side.

The Koiari who acted as guide knew "Udu mayani" (= either Macropus brennii or Dorcopsis), tree kangaroo, Perameles broadbeati ("mayani mnadu"). But he did not recognize my description of Dasyurus. So apparently the thing does not get down so low. He remarked that the Perameles and Dendrolagus are all killed off on this side. The former certainly is not, because we have recently had a young specimen of it.

We had the bat sticks on the job tonight again – one more bat – It appears to be another species of Pipistrellus but with rufous underparts, and forearm 36. That of the other is 29. Those at Tavara 31, 32.

Fri. Feb. 5. A very good trap-morning: 1 Pteropus lepidus ♀, mammae 1-2=6, tail up-curling at tip, taken at foot of tree; 1 Leptomys probably elegans, taken in steel trap upon which it apparently jumped, tail thick, no white brow spot as in Jay R. sp., eyes small, ♂ ad.; 1 Melomys probably platyops (at any rate new to locality); 3 Rattus mordax. The bat caught last night has stay

nipples marks on under surface.

The terminal 45 mm. of the tail of Leptonycteris is white. The recorded type locality (if you can call it such) is "British New Guinea".

Further possibilities for this region (without going up to E Java) are: a Pteropyle of the melas group; Phalanger leucippus (above Rona), Eudromicia and Distocchurus, Dactylonax, another Pseudocheirus, another Melomys, Anisomys, Hydromys, Lorentzimys and Hydromys, and quite a number of additional bats.

This morning started arrangements for the mule trip to Tavaresi (15 miles).

Sent two boys out to try the Dobsonia place once more (see yesterday, p. 5), but they reported that no bats were there at all; two other boys with net, sulphur + matches on roving commission. They picked up two: a female and sub-adult male of the pointed-eared Hipposideros(?) See nos 3502, 3485, 3311, 3005, etc. Note that #s 3311-3312 were also mother + son. The tree from which the present two (3521-3522) were taken was very large and with the hole at the ground level (as usual with these bats).

On the underside of the leaves of a small shrub growing in the forest at the edge of a stream I found literally hundreds of one species of small mts clustering. Saved some. Pyxelids, I think.

How am I going to get these fruit bats? (I've just come in after a shower.) With the light switched off I can sometimes just see them sail by overhead just over the tree tops. I can hear them settle with much flapping of wings. But I can't see to shoot at them. And with the light on they are invisible. Their eyes seem not to shine at all. I suspect they are the same species of Dobsonia (if they were) that flew out of the grotto yesterday. But the several Dobsonia I've had dealings with already shone fairly well.

As for tarsiers, wallabies, etc. there seem to be none. The region is pretty much shot out. Many hundreds of

boys are employed on the several rubber plantations nearby & any scrap of meat they can pick up is so much extra. Perhaps we'll do better in the camp (next but one) at Barnari Rest House.

Sat. Feb. 6. Showery last night. Catch (besides some half-grown Rattus praetor which I did not keep): 1 Rattus mordax, 1 ♂ Stenomys verecundus (the third ♂; I lack the female still); 1 Uromys and 1 Rattus of the brownii or concolor group. The two latter are new for this camp and the last is new to the collection. Uromys caught among second growth adjoining a native garden. The Uromys was taken in forest. The new rat has the tail black beneath as well as on top, as in R. praetor.

Had a note from Godson this morning that rather puts another of my plans out of joint. He can't let me have mules to Tavareri. I have written back to ask for them instead as far as Barnari, as the road that far is said to be not too bad. Also if I can go that far I can take three boys & a couple of days food & go down light to the bat caves. But if I can't get to Barnari by mule it will mean doing more scouting for carriers - and carriers seem as scarce as hens' teeth.

Sun. Feb. 7. Moved out of rest house to main road (about 3 miles of carrying for my five boys) where Mr Brewster kindly brought his motor truck and took everything in to the store. This in preparation for move to Barnari rest house some miles E, said move to be either tomorrow or Tuesday.

Mr Godson, though he can't let me have mules for the entire trip to Tavareri (the part beyond the rest house being over very bad road), has agreed to let me have mules as far as the rest house on Tuesday. Meanwhile I'm staying with the Brewsters who kindly offered me a room. Hope to extract bats from their house ~~today~~ tomorrow.

The possibility of getting to Efogi is re-opened. This

morning two native police passed through on their way to Kokoda. I sent my message by them to the Efogi people, offering good pay if they would come out and carry my cargo in. Even so they may not do so, and in any case I need not expect them for two weeks.

In the p.m. Brewster & Everett along to see Johnson.

Fron. Feb. 8. Fair and sunny morning. Arranged the carga for the mule trip tomorrow (5 mules). In the evening we netted a corner of Brewster's house for bats. They were very shy of coming out, but with nearly total darkness some came out way & we got 14. all Pipistrellus.

Tues. Feb. 9. Up early. Ground mist but clear and sunny later. Bats all skins except 2 juvenal (or y. ad). Twelve adults all female, and only one of them with an embryo (rather small). So probably not the breeding season. The two younger bats (♂ + ♀) probably left-overs from the previous reproductive period.

Left about 10.30 & reached Barnari rest house about 1 pm. The last hour road rather up & down (intervals of 100 to 200 feet) very slight climb. Rest house built on a ridge running NW-SE and valleys on either side parts of Kemp-Welch system.

Most of afternoon went by in fixing up camp &c. However we got out 50 traps (40 rat, 10 steel) with which to sample the fauna.

Melomys lutillus (or muscalis ?). Another paragraph in the life history notes of this species: When clearing away some cut grass by the camp a boy uncovered the nest of one. Built like a bird's nest on the ground, it appeared made of shredded grass blades. The external diameter was six inches; internal about 2". It was rather deep but had no roof other than the

loose cut grass (quite dry & brown) beneath which it was built. It contained two young (the usual number) which squeaked and scampered actively about. They were 3/4 grown and though in somewhat juvenal pelage were readily recognizable as belonging to the small grass Mulotrys species.

Heavy showers of rain sweep through the pass and along the sides & tops of the high mountains N. of us.

In evening went back along the road with light, but saw only the eye of a night hawk. Ahead of us the wind starts to wind down off the end of the spur — probably for a thousand feet or so.

Feb. 10, Wed. Putting two boys in charge of the camp at Baruari, I took the other 3 and bat-collecting equipment + food for a few days and pushed on down to Tavareri. Left at 9 am + arr'd about 11.30. Stayed at the plantation house, a pleasant enough place. Tavareri is a small rubber estate owned by B.N.G. and is in charge of a half-cast named Kevin. The territory is very hilly, the altitude 220 meters (at the house on the hill above the factory), and the Musgrave River runs through it.

In the afternoon we tackled the first of the two caves. About 2 miles E., it is reached by a rough, ridgy track through forest. The main entrance is of sink-hole type but has a sloping entrance. One hears the flaps of wings almost at once. In about 30 feet of what may be termed vestibule the main vault-like chamber is reached — roughly circular and about 50 feet in diameter with the deeply pitted and recessed ~~walls~~

roof 30 feet overhead. Light filters in through another entrance, and the bats (Dobsonia), whose eyes glowed orange-yellow as they hung in small groups, were escaping there. None tried to go out by the way we entered as I had two boys posted there with sticks & all they saw was a swift.

On the opposite side of the cavern a low tunnel dipped steeply to a lower level (30 feet lower) where it branched T-fashion, the right arm, though large beginning to ascend again, while the left arm continued gradually downwards. This arm is the main drain of the cavern and a miniature stream originates there. The cave is dissolved out of limestone, stalactites & odd-shaped formations being common. In many places the original beds often nearly vertical can plainly be seen.

The T-shaped part is the residence of a much smaller bat (Nyctophilus?) whose eyes do not shine. The left branch wanders down through a series of chambers becoming progressively smaller & narrower until the roof drags down to (a mere 2 feet above the floor and the walls are only a yard apart — the stream goes on down inside however. All told this part may be 200 or 300 feet long.

We returned to the outside with 32 Dobsonia, 12 Nyctophilus and two cave-nesting swifts (a small colony in the left arm of the T. I saw also roaches, spiders and some kind of centipede.

Seven only of the Dobsonia were males. The sexes of the other bat were about evenly taken. Two nursing young of Dobsonia (the membranes of the wings almost without pigment) were brought down.

Thurs. Feb. 11. When skinning Dobsonia noticed besides the usual actively running "bat lice", a yellow mite and what is apparently a true louse — both fixed in the membranes.

Today went to the other cave, a mile S of the

plantation and across the Musgrave. Evidently someone was washing one of the creeks we went up as the water was discoloured & very muddy.

This cave entrance was almost pit-like and a scaffold had to be improvised to get down the 12 feet to the floor of a narrow fissure beyond which a few bats could be seen flickering. Though small & narrow this cave is complex and one has to watch one's step. Of the two species of Rhinolophus (?) living there 4 of one and 13 of the other were secured. Three young were discarded. Saw a small crab (in water), a frog, and swarms of midges down there in the darkness.

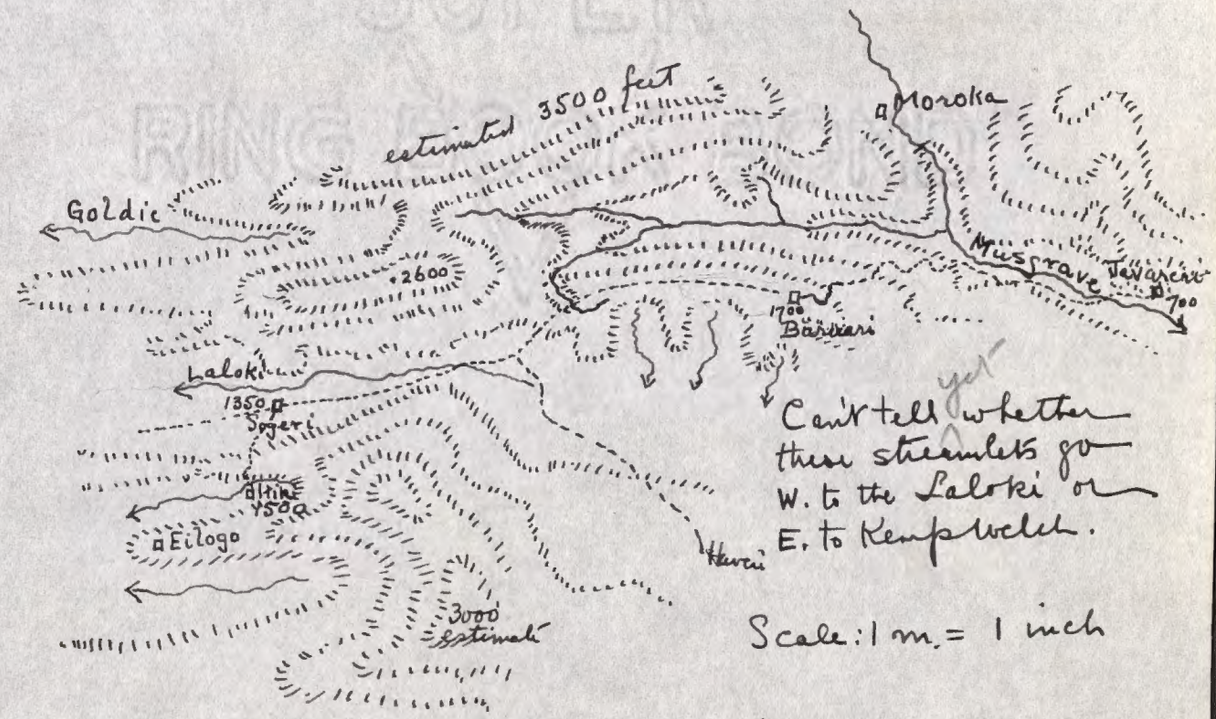
The guide to both cave entrances was an old Koiari. He seemed to know all the twists & turns of the caves, but it is to be wondered how he ever found the hardihood to explore them originally, assuming he had to use native torches to give light. Two small bandicoots brought in in the evening.

Fri. Feb. 12 Left Tavarere before light at a quarter to five so as to get up the hill before the sun became too hot. Back at Baruari by 7.45. Boys all OK & camp in good order. Now going to set out traps. A letter from Godson to say that Rand is coming by the "Royal Endeavour" due in Moresby ~~about~~ next week.

Went out this p.m. along track of a prospector's survey. The country very steep and ridgy, forested. Sororo and Kanamoia are putting their traps out that way. A few trees have good-looking bat-holes. The drainage all runs away S from here, but whether it goes out to the Musgrave or whether to the Lakekamu I don't know. On the N. side the main valley of the Musgrave cuts us off very completely. Here Tuka & Teikende are setting traps, all rat-traps are to be trap- or wire-sets for three days, then

we are making a real drive to get those arboreal creatures Chiromys forbesi and Pogonomys loriae. Lira who has the steel traps to set cannot get his traps into the trees so readily, but when opportunity offers he will do so. And so here's hoping.

The map situation (the eastern part of p. 3) seems to work out much as follows.



It is clear that the Laloki and the Musgrave are back to back with the divide separating them — a divide which is very much more complex than the above sketch suggests.

200 rat traps and 40 steel are now out. The latter will be baited tomorrow.

To the list on p. 1 we add: Echimys fera, Rattus of the concolor group, another sp. of Pipistrellus, Leptomys, Melomys platyops?, and from Tavareri caves, Dobsonia, a second species of Hyetophilus, and two Rhinolophus (total, 9 more).

Sat. Feb. 13. Winds of gale force + driving rain most of the night. Supposed Rand & Brass are at sea on the "Royal Endeavour" with the Shorty NW behind them.

A rather choice lot of Trips in traps: the female of Leptomys elegans the female of Phascogale murex, a young ♀ Uromys, Melomys naso ?, and the common Rattus praetor.

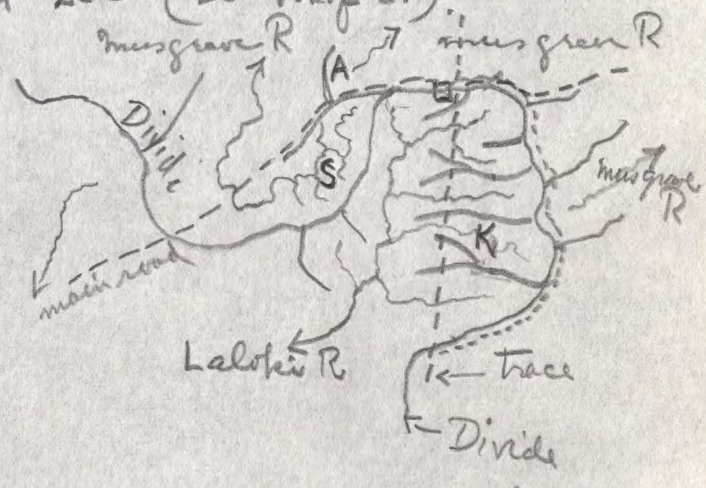
Leptomys from a tree- or vine-trap though fully adult is very much smaller than the male taken a few miles west of here. Mammae, 0-2 = 4. Lacks the 2nd pad at the base of the 5th toe (present in R. & Melomys).

Phascogale also from a tree-trap is also much smaller than its male. The mammary formula is, 2 pairs = 4; the pouch undeveloped but the milk area with fairly russet, hands & feet brown, tail well haired, dorsal pelage brownish gray.

I went with Lira this morning to look at his steel traps and to put bait (manioc) over each. Saw track of Perameles the large bandicoot which I so want to get. One of the boys saw a cassowary today.

This p.m. went S. along the survey trace for quite a way. Actually perhaps a mile but it is a very up-and-down mile. Found an old Koiari hunting track which comes back all the way along the divide. And actually the trace has a bearing about 200° (20° W. of S.)

So far as I can work it out so far the opposite drawing shows how the water parting snakes about, and what a lot of ridges lead one astray (downward). The Koiari trail is a lot round about but it is relatively speaking level; whereas there is at least a 100 ft interval at each rise & fall of the compass trace. The letters A K & S indicate where Aia and Taikundo, Kanemoria and Sooro (with rat traps) and Lira with steel traps have their sets. So technically A & S are in the Musgrave drainage and K on the Laloki.



Sun. Feb. 14. Weather improved: no rain and much less wind. Catch poor, though the quality was fair. Pogonomys lepidus in a tree trap; also a young Rattus mordax up

a tree.

Went along the Koiari track trying to "sulphurize" bats ~~to~~ from hollow trees. Got a very small, dark flight fox out of one, which I am saving for Rand. Nothing else.

A cuscus reported located this pm. Went out at once. The animal, all but impossible for me to see, was hidden in a dense mass of vines & leaves that matted together the foliage of a quite small tree about 4 meters in diameter. It was too close to shoot, and when I got away a bit I couldn't see the animal. So while one boy cut away surrounding trees the other kept jerking at some vines, all of which made the animal so uneasy that he came out & tried cross to another, bigger tree. He was knocked over en route. It proved to be the young phase (pelage) of Phalanger maculatus, ♂, and adds a species to the Astrolabe Range collection.

Out "jacking" ~~last~~ to night but saw only a night hawk.

Mon. Feb. 15. Clear, rather cold, not much wind. Traps gave poor results: 3 Rattus rajinus, 1 Melomys naso?

This pm. Goods got a very fine brown Phalanger, with underparts white back to half the pouch. Tail slender, and much of it bare. Two young in the pouch. Mammae 2 pairs. (#s 3592-4). the young are ♂ + ♀. In the adult ♀ the epipubic bones measure 50 mm and are strongly curved. In the juvenile ♂ the testes not yet descended. The pouch of the j. ♀ very small and rudimentary in appearance. The old ♀ with much fat beneath the skin.

Rain late this pm, clear again tonight. Barometer reading (1 pm) 69.° (just 500 meters).

Tu. Feb. 16. Walked down to Sogori & back, seven miles each way, and as I had to go on for another ½ mile to Gordon's house the phone Moresby I reckon I touched 15 miles in all!

Learned from Dupain of B.P.C. that the "Royal Endeavour" with Brass & Rand on board (presumably) left Daru yesterday and is due in Moresby Friday or Saturday. Also Searle of A.W.A. told me that messages have passed between Rand & Archbold and that, though he could not divulge their contents (naturally), everything seemed all right. Arranged with Gordon for the mules to come & freight us down to Sogori next Monday. That will give me six more trapping nights for this camp. Also Rand should know where he stands & be able to tell me.

Bats seem scarce. I took two boys with sticks & the gasoline lamp and tried out various places along the trail. Only two bats were seen and neither returned to the light. Perhaps it is so strong that it repels the animals.

Wed. Feb. 17 Strong winds from midnight onwards an excellent trap morning: novelties for this camp are Stenomys verecundus ♂ (still lack the ♀); a small, black-tailed Melomys; and the ♀ of Phascogale melanura. In addition there were several Melomys naso (?), and Rattus morbax.

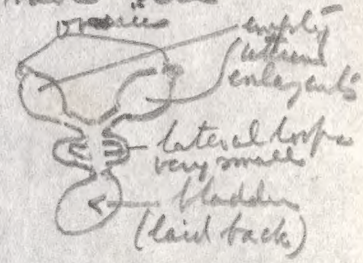
The Phascogale has a mammary formula of 2 pairs as with P. murex. P. rona which we took abundantly at Daviumbue had 3 pairs. (See also next p.)

The black-tailed Melomys is apparently new to my Astrolabe faunal list. Its underparts are pure white & it is related to some we caught in the Fly R. area.

I have made two announcements to the boys this morning: one, the amount of specimen bonus each has earned during the past month; and, two,

the fact that they are entering their last month of work, after which I shall go away & they will be returned to their villages & paid off. I added that I believed that each one of them could easily double his mammal bonus. We shall see. For bonuses (five) ranging from a total of 60 cents (American) to $1.10 we now show 195 specimens covering 37 species, which include one new species, one (at least) new record for Papua, and the rediscovery of *Leptomys elegans*.

The *Phascogale* when opened proved to have the reproductive system arranged as follows:



The uterine lateral horns very short; large swellings below each ovary, perhaps corresponding to the two pouches which were still of a size to go into the enlargements; no median anterior sac as in *Petaurus*. Compare with uterine arrangements of *Phascogale rosa* of Daviumbre.

Old silver hat (Cowcow) came by & retailed at great length the horrors of the road (advocated by Kevin of Javaré) between J. and Koji.

And later the village policeman came up from Morika to see if he could do anything for us. I told him to get us a tree-kangaroo.

Thur. Feb. 18. Stormy weather with strong winds from 11 o'clock last night on.

In traps 1 *Uromys*, 3 *Melomys* new (?), and *Hydromys* (which I had not even put on my list for the Astrolabe highlands). The latter taken with a steel trap alongside a little creek in the forest.

This morning took the first bats for this camp — *Hipposideros* with the pointed ears. Goro & Kamamia had found a large tree with a hole in it about 20 feet from the ground. A long stick had been poked into it & two bats came out and (naturally) flew away.

Goro was orderly for today, so I took K.

to show me the tree & do the climbing, hoping that the bats might have returned. We leaned two poles against the tree & tied on a cross piece just below the hole so that the boy might sit there & have his hands free. He went up & I passed him up the butterfly net & sulphur & matches, tied on the end of a bast-rope. He announced that he could see the bats. The sulphur did not bring them out (probably no draft to make it penetrate), so I sent up a lighted stick with which, holding the net over most of the opening, he prodded & rattled about the interior. First one & a minute later the other flew out into the net. These were no more. They turned out on inspection to be the pointed-eared bat of which we have caught quite a few, — almost always two (mother & child). In this case it was mother & daughter. And we know that the daughter could fly well because she flew away yesterday.

After lunch went to see new trap line of Aira & Taikuda. I find that (probably inspired by the capture of Hydromys this morning) they have transferred their entire line of traps to the bottom of a deep ravine in the forest, with a rill of water flowing in it. I suppose their line is quite half a mile long. Some very large trees are growing almost at the water edge.

A bit later I went out with Lira to see the steel traps. The Hydromys was caught in one I set for him the other day as a demonstration. His line goes all over the place, up hill & downdale — simply miles of it seemingly.

Fri. Feb. 19. In spite of heavy rain after midday W., a good catch came in, chiefly from careful re sets & retrieves. I think: Another large ♂ Phascogale murex, another ♀ Sminthopsis elegans, one Melomys naso, three M. leucopus, and 3 Rattus rattus. Another strange catch was one of the

least parrots (saved for Rand) in a rat-trap set on a tree trunk about 3 feet from the ground in forest. Both the Phascogale and the Leptomys were this time caught in steel traps on the ground close to the bases of large forest trees well above water.

My boys for all their good behavior & cheerfulness are still little savages: they prefer squatting to sitting at the work table when they do their skinning. The table is of sticks, & a big bench of poles runs along either side. All four skinners are at present squatting on the benches, knees up to their chins, while they skin the day's catch of rats.

Sat. Feb. 20. Fair. No storm last night. Catch very valuable: a new species of Lorentzimys, another species of the Rattus concolor group; Melomys leucopus and M. naso (?); two Rattus mordax, two R. praedor.

Lorentzimys #3639 taken in tree trap 6 feet off ground, in forested ravine on large tree. A young female, no embryos. Head unfortunately badly broken by trap. Characteristic form of ears, lips tumid, feet & hands slender, scansorial in my opinion; tail rather long, well haired. Color rather dark brown (young), underparts dull whitish gray, hairs gray based, a faint median brownish line beneath feet grayish. Mamae: could find only the 2 pairs of inguinal but glands under other suggest a pair of axillae (compare with #2265 of Palmer Junction). Pads on feet small, the pad missing in Leptomys is present in Lorentzimys.

Rattus (of concolor grp). These have remarkably long-bodies after the fashion of weasels. #3630. See also #3523.

A second of the tiny parrots was caught today in another trap - also a tree trap.

Koiari people have been passing towards Tavareri in a constant stream today. I understand there is a big celebration coming off in one of their villages.

Sun. Feb. 21. Traps poor: one Melomys naso, one Rattus mordax.

Tomorrow walk west up onto the forested ridge

to the north of the road to Sogeri. Some rough going but at length we struck Koiari tracks that took us over the ridge crests & avoided much unnecessary drudgery. We sht two Phalangers, another brown one, ♀, and a gray one ♂ like the ♀ I sht last year at Rona.

I feel convinced that two species are involved, not a dichroic single species. The differences set out below are unfortunately not conclusive owing to the difference in the sexes of the animals compared, but here goes:

	gray Phalanger ♂	brown Phalanger ♀
1	The front of rhinarium not deeply cleft.	deeply cleft.
2	Longest fore claw 6 mm.	Longest fore claw 7.5 mm.
3	" hind " 15 mm.	" hind " 17 mm.
4	Under surface of tail with proximal 140 mm. rough.	Under surface of tail with proximal 120 mm. relatively smooth. (at see L. 28, P. 4)
5	Tail/Body length = 46%	Tail/Body length = 49%.
6	Diameter of tail at terminal of hair, 17 mm. (tail appearing thicker)	Diam. of tail at terminal of hair, 13 mm. (tail appearing relatively thin).
7	Tail diam/length = 4.4%	above tail diam./length = 3.3%.
8	Color pattern ...	.....

(No difference can be seen in the ears. The ♀ (brown) has 2 small pouch young.)

9	Epipubics 40 mm; spread of tips 52. (little curved)	Epipubics 60 mm; spread of tips 60. (Slightly curved)

Today's walk which produced the two opossums took just six hours. For the first time in my life I have seen sparks struck by a bush-knife against the thin, wiry mountain bamboo-grass. Grasses are supposed to contain a lot of silica, & the sparks which came twice were unmistakable.

Mon. Feb. 22. Moving day. And just luck to get the ♀ of Sternomys vexcundus at last. New mammary formula in 1-2=6, as in Rattus mordax. The specimen very young but after I had made the catalogue entry (# 3641) I examined the skin from the inside, after the boy had skinned it, and there is no mistake about the formula.

Got down to Siperia - settled down at Johnson's place. Heavy rain in afternoon. No word yet of the "Royal Endeavour" 4 days overdue.

Wed. Feb. 24. Heavy ground mist but fair day. Set 250 traps along stream in pastures. Torrential rain in pm. Had traps go out afterwards & reset.

Wed. Feb. 25. Big catch of common things: Grass Melomys, 13, Rattus fraetor, 7, Rattus mordax 2, R. of concolor group, 3. Also took 3 small rails, one of which I saved for Rand.

Thursday, Feb. 26. Another Phascogale murex. Also 24 rats & mice in traps. Leave for Moresby at once but will return here tomorrow.

Closing letter # 27

Port Moresby, Thurs. Feb. 25.

Closed # 27 in a hurry for the mail this p.m. Rand is leaving on the "Stella Polaris" for Java; Brass on the "Macdhui" for Brisbane. Plan to return in the morning to the mountains.

Fri. Feb. 26. Stayed over another day to have last try at getting carriers. Humphries, R. M. has undertaken to do what he can, & has given me a letter to Horan (now at Etiki) to help out.

Adamson & Speedy in town. Ivan Champion still at Rona. Enlarged Astrolabe map 5-times with photographs today.

Rain yday pm & today since 7 o'clock pm. Leaving in morning.

Sat. Feb 27. Had tea yesterday with Amitt and Mrs Lee. He told me something of H. O. Forbes who first collected Pogonomys forbesi (one of the tree species I lack) He came out as a British Museum Collector. But was given a government patrol job which helped him with his collecting work & moving about as he did, was also useful to the Government.

Left this a.m. at 7.15. Rona about 10. Saw Ivan Champion. ~~Passed~~ Below Rona & Sogeri passed the A.R.M. Mr Horan & presented a letter from the R.M. Mr Humphries regarding getting me carriers. Heavy rain began at 2. pm.

Sunday. Feb 28. A couple of good things in the traps in addition to the common stuff: another ♂ Leptomys elegans and another outlying Melomys and a number

of common Rattan. Saw R. M., Mr. Humphries this morning & he instructed the local village policemen to carry my baggage to Ubari & thence on the relay to Doi Baba, &c. It looks rosy for the mountain trip but I doubt. We picked up traps & start out in the morning.

Monday, Mar. 1. Everything packed & ready, but only 13 of the promised 20 Koiaris turned up. That's just the way with these things (and of course Humphries has gone back to Moresby). Well I have an energetic police boy, Mubadi by name who was personal boy to Williams on the Fly R. trip. Humphries detailed him to me. So I have him skurrying around trying to pick up half a dozen more carriers. Meanwhile I have let the 13 (3 of them are women) carry their part of the cargo across the river & up to Cowcow's village where they will wait till tomorrow morning. This afternoon the local village policeboy secured 3 more Koiaris & himself will carry, so with those 4 we can get away, I think. Perhaps it is just as well we are delaying, as one of my boys Gorro has developed some fever today. Later. Dysenteric symptoms appear with Gorro. Shall have to leave him behind.

Tuesday. Mar. 2. Made stretcher of rice bags & the other 4 boys carried G. down to the rubber company's hospital where Brewster has kindly offered to care for him during my absence.

Consequently I only got away from Johnston's place at about 9.15. I'll tabulate the day's itinerary, &c over page.

From Aginame 10 a.m. (575 m.); creek (460 m.); high, (600 m.); small creek, 11.15 a.m. (510 m.); high ridge, 11.50 (620 m.); Uberi creek, 12.30 (330 m.); Edakadabuna 1. pm., village policeman Ubigi (400 m.).

Such are the ups + downs of one day, and altho'gh trying to get to the hills, we are actually a few meters lower than when we started. The road runs in front for the entire distance but from one or two ridges it is possible to get a glimpse of hills + I took a few bearings with the prismatic wheel. Bill Adamson insisted upon lending me.

The Koiaris are indifferent carriers, they take too many spells, but they have one good trick for double loads (pole loads): each boy carries a light stick, shoulder high, with a very small crotch in the top, which they slip under the pole to support the load when they want a short rest.

Uberi creek flows through a deep valley amidst huge aglomerate boulders. It is small + today was easy to cross. The village of Edakadabuna (police boy Ubigi) is just up the hill a couple of hundred feet above the crossing.

A gray cuscus ♂ with strong dorsal line was brought in just after we arrived. It had been caught among the rocks of Uberi mountain by a boy with a dog. There is at least one cat here — of the prevailing tortoiseshell hue.

I served out a meal of rice + paid off the carriers (four women, three small boys + two babies in arms included). Some (of the adults) chose tobacco others cash. My rate of pay is 1 shilling or 4 sticks of tobacco. Then they all said good bye + cleared off back to their village.

Things are never as rosy as they sometimes seem. Urigi has only two carriers from me and by going to a place a few miles down river can get 4 more — perhaps. This means that I must leave some baggage & send back from Doribaiva for it. — which isn't quite so bad as at first sight it seems because I had planned to stay over a day at that place in order to look at the high country E & SE of it.

A couple of bats flying above the villages clearing just at dusk, two large fd Pipistrellus. I'll try to sample them on the way out.

Wed. Mar. 3. Got away from Uberi at 7.15, but had to leave 2 boxes of traps to be brought along tomorrow. Here's the day's high lights: Crest of Uberi range, 9.10 (720 m.); bottom of next valley, at junction of two main streams, 10.55 (250 m.); foot of next hill, up to Doribaiva 12.15 (1 hour for food); Doribaiva rest house on ridge, 3 pm (790 metres).

The road runs E at first then rises steeply to the first crest. The north side of the ridge of Uberi is exceedingly steep and slippery. On both sides, in the stream beds, highly contorted sedimentary rocks appear to underlie the agglomerates.

The south side of Doribaiva hill the top covered frosted less near praise on the ridge up which the track goes which made the climb in the early afternoon almost perfectly bearable. And I was grieved to understand too that Doribaiva was far higher than its actually 2500 feet. The trouble is that we lost a whole thousand feet going down into the valley between Uberi & here.

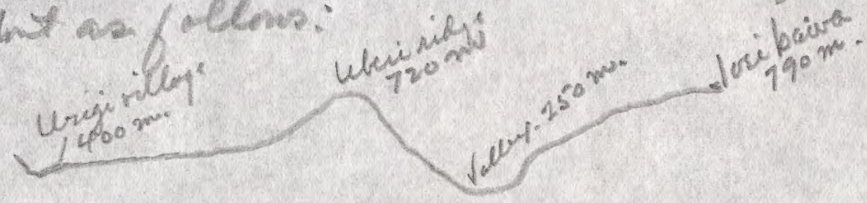
There are two villages here, one east, one west. The rest house & apparently plenty of carriers. Tomorrow I shall give my boys a spell while I go and try out the high ground east of

this place.

This ridge is not the divide between the Bromo & Lalaki rivers. The next one is that. N. of here is a stream (down about 1000 feet, of course) which works around west to the Goldie River.

5 from the police boy Urigi & 3 others have just come in with the traps boxes, so now we have everything here.

The day's travel in section, seen from the SE is about as follows:



Some vegetables brought forward included: sweet potatoes, manioca, rather bitter cucumbers, and chicken corn. One of the huts here is conical (tipi-shaped) + thatched all over with pandanus leaves.

I noticed the agglomerates once more coming up the Loribaiwa hill, but here on the top the exposures are schistose - much contorted.

The horizontal trace of where we have come is about:

Thur. Mar. 4. Gave the boys a spell while I took my police boy & two locals to try to find accessible high ground on the mountains E of us. We were out ten hours, the last four in torrents of rain. The road went endlessly up & down ridges beyond the village E of us until we reached the main divide between the Brown & Goldie river systems. Then it went up at an average of 40° with nearly precipitous slopes on either side. From 3500 feet it was practically a knife-edge but steeply tilted. A fern covered, very small flat was reached at noon, altitude 4900 feet. We were fogged in & could see little or nothing but I found that we were still on a spur whose crest was too jagged & irregular to be at once passable. A few days (which I can't spare) of road making would be needed.

The mist lifted for a few minutes — just long enough for me to get bearings on Doribaiva & Navoro. Then we went down.

Leeches abundant on tops of ridge. Giant acorns at 3000 feet. Boy cut his leg with bush-knife but the large it is on the shin & not dangerous. I tied it up with moss & leaves & treated it at camp. Down at the village they gave me some boiled sweet potatoes & didn't they taste good! Another hour needed to get back to the rest house. Plenty of sugarcane & bananas in the gardens here. Leaving tomorrow for Navoro.

Fri. Mar. 5. Left Doribaiva at 7.15 — steeply down to stream at 520 metres; then a steep pull up, interrupted once only by a small stream to an ultimate crest reached at 9.30 — 1040 metres or about 3400 feet — the true divide between the Brown and Goldie rivers. There is a steep descent followed by a gradual fall, following the course of the river to the Navoro rest house, down at 6½ m., reached just at noon. All is in heavy forest. There seem to be plenty of leeches.

Some Kocari boys who have been down to work at

the Brown river report it is too high at present for us to cross.

The village policeman - name Giriri - seems to have more influence than is usually found in Papua. He readily secured some new boys for me to go on to Emoria tomorrow and also loads of yam, sweet potatoes, taro, cucumber, corn. So I saved my rice & fed the boys on local food. Haoro (the rest house) is in a hollow whence no mountains are visible. The village is a mile or so east & on a small hill.

Heavy rain from 3 pm till midnight.

Sat. Mar. 6. Left Haoro at 7.15; reached crest of high ridge (3300 ft) at 10; and down to Emoria (2400 ft) at 10.45 -- a short morning. I arranged yesterday for 15 carriers to go right through with me & be paid off at Sogeri when we get out. This means that I have to buy food for them, but it also means that I shall have only half a dozen to hire at each village. The system seems to work all right at Emoria: I fed 28 hungry boys at noon today for one stick of tobacco and 4 tablespoons of salt. The food included sweet potatoes, taro, corn, pineapple, watermelon, cucumber.

Have decided to try to reach Kagi tomorrow instead of breaking the journey at Efogi. I see that Adamson did it recently in 6½ hours. His timing was: to Efogi, 3½ hrs; Efogi to Nadunuma, 1 hr 25 min.; Nadunuma to Kagi, 45 min. And it will save me a day each way.

The village policemen are respectively, for Emoria, Misemi; for Nadunuma, Idiki; for Kagi, ?.

The S.D.A. has apparently a firm grip on these people. We arrived on their Sunday (today is Sat.) & the native teacher ringing his bell lustily had every one of them in Church three times since our arrival. He is

a nice old chap, tho we can hardly be said to understand each other, and then brought me pineapples & tomatoes ad lib.

These people thereon still Koiaria are very different from the sophisticated crowd around Itikí, whom I tried so hard to persuade to carry for me a month ago. I asked for six boys this evening to go through to Kagi and 8 jumped forward — all husky lads, so I left them to settle among themselves whom should be left out.

Sun. Mar. 7. Well, it has been a hectic day all right. We left Koiaria at 7 a.m. - down to a brook (620 meters); a steep climb up a ridge side and eastward along its crest to a clearing reached at 9.15 (1300 m.), named Tabunemu. Wonderful view where cloud did not interfere. I found the people had laid out quantities of taro, sweet potatoes, watermelons, pawpaws & pineapples neatly on beds of leaves - like a market place - in anticipation of our arrival. I bought a few pawpaws for the boys to eat at once, but told the inhabitants that I could only buy their food ~~in advance~~ if they would bring it on with ~~them~~ us to Kagi. Nothing loth, they did.

Well, there was Efoji down below us on the side of a huge basin-like valley with lesser valleys fluting its sides like rays — and across the way, seeming on a level with us was Kagi our destination; but with this difference, we at 4200 feet were on a ridge, & Kagi (on a small ridge) nestled among huge hills that swelled around it & rose above it for at least another 3000 feet.

We got down to Efoji at 11.30 (1125 m.); then down to one river (860 m), over a ridge (920 m) & down go to the Efoji R. (860 m.); thence a huge climb brought us to Nabunuma (1300 m); a slight dip to a brook at 1140 m., and another substantial climb to Kagi our destination (1450 m). Approx. 4700 feet then is our operating level for about a week to come.

The Koia village policemen came along with us, and

the Nudeuenuna man turned up soon after we arrived. He is the old fellow I gave a lift to on the truck coming out from Morobe the other day.

Rain started just as we arrived. A miserable place, the premium shelter of the forest description; moreover water is a long way away. However I've rigged up a tent fly to catch rain water.

I prevailed on 4 carriers to try their luck with 10 more traps and a steel trap a piece. Tomorrow however will be our first big day of trap-setting. Well things will look far brighter in the morning. They always do. I have a great heap of sweet potatoes & taro already & nearly 100 lbs of rice, so we are pretty safe from starvation.

Mar. 8 Mon. Kogi policemen in this morning - were 1 lua. The traps set yesterday caught 1 Petaurus (cuscus group), and 2 Sternomys. The latter are quite distinct from those at the 1500 ft level, being much smaller.

Three cuscus, the beautiful, black, soft-furred Phalanger sericeus brought in by local from a few hundred feet above camp. He states that the old female & the juv. ♀ were inside a hollow tree, the adult male being outside (#s 3682-4).

We are busy now getting the mass of the traps out, and if this morning's catch can be taken as an indication we should have a big crop of specimens tomorrow. Today all but two of the carriers (who had fever) took out traps, and any regular boys put out theirs, & I put out mine - 30!

There must be quite a large native population here. Great quantities of the forest has been cut off the hillsides to make room for gardens, so that at first sight the valley has a quite civilized appearance.

The rosettes of the underside of the tail mentioned in connection with the grey cuscus (L.27, P.19) is in P. sericeus definitely a sex character; the male is rough, the female smooth.

Following are magnetic bearings taken with Adamson's prismatic during the trip.

From Rona Pt: Lebri Hill 43°
Brewster Pk 72
Massif 54-61½
Sugarloaf 66
Itiki Pk 89

From Johnston Lower: Ubri Hill 358
Brewster Pk 51
Itiki Pk 99
W. end Ubri 344

J. Hill: J. House 20
W. end Ubri 344
E " 7
Little Ubri 16½
Brewster Pk 46

From Agriamen: Brewster Pk 92
Hombron 270
Ubri Hill 360

From Adakandabena: Brewster Hill 130 ?
Head Ubri R. 100
Ubri Hill 320
Ridge just crossed 267.

From Doribura: Large hill E 91
Upper Ridge 95
Hill SE 130.
Lower Pk 98
Hill W. 268
Ubri Notch 235
" pass 209°
Little Ubri 192°

From "Eastern Hill" near trip. Doribura 267
Naro ridge 340

From "Upper Ridge" Doribura:
Cliff Ubri 247
Victoria 342-348-354

From Ridge Doribura-Naro: Ubri Hill 237
Doribura 237
Big Hill E 116

From Tabunemen: Pt on Doribura "Hill E", 186
Pk of same 183
E end of same ridge 160
Ubri Hill 198
E Kaji 8
Kaji 35

From Kaji: Victoria (2 Pk from Ro.) 323
Hombron Bluff 223
E Kaji 245
Tabunemen 207

Big Hill W. 270

This afternoon four Petaurus were brought to me. They were male, female + two juveniles, m. + f. All four had been taken from the same tree. I could distinguish only two mammae in the pouch of the female. They apparently represent the dark race of the mountains described by me last year. Also I believe I distinguish a difference in proportion of ear-lgth to fore-lgth, and in the shape of the ear, compared with P. p. flaviventer of southern Papua.

I forgot to note the fact that on the lower Kempelvelch Willis's boys obtained a pygarious species of one of Pogonomys. I did not recognise the animals, twelve of which were taken from a single tree. They are to go to Arkelen, so we'll go over them carefully in N.Y.

The Koiaris are a wild bunch. Wonderful carriers, they charge up the steepest hills yelling their heads off. But no forethought. I tried giving each a piece of tobacco to buy himself food, & exactly what I thought they might do happened: they smoked the tobacco + then came to me + said they were hungry.

Tues. Mar 9. Last night's rain only stopped at 5 a.m. And today it began again at 11 a.m. No sunshine at all. The catch was the biggest I've had yet in Papua: 37 (all rodents). It includes Rattus praetor, R. (brunei), Stenomys (prob. 2 spp.), Melomys of 4 species, Leptomys (probably ernstmayri), and the ♂ of the new Lorentzimys. Everything was soaked by rain + very messy, & besides, on account of the large number of specimens I had to give most of them a provisional make-up — to be re-done on their arrival at the museum. It is the first time this trip that I've had to do so. (Later, I made them all up after all.)

The Lorentzimys was caught on top of a fallen log.

Today has been a trying one. Thirty two specimens + the weather atrocious. When the boys came back from

re-baiting traps I dosed them with paregoric & quinine. Tonight at sunset however the weather cleared, & I hope that the storm is over. Have decided to move out on Saturday. I must leave some leeway in case some flooded river holds us up. Once across the Naoro however there'll be little to trouble us in that respect.

Wed. Mar. 10. Three things new to the collection this morning: Peromyscus of the oreas group; a new short headed, short-eared Nelomys, and a very small adult ♀ Steromys with mammae, 1-2=6.

A better day, though hazy & a bit overcast. Went up the track to where it leaves this ridge & turns NNW. approximately 6500 feet, I estimate. Two kinds of acorns on track in spots, one very large. A begonia with dioecious white fl. No very good views. A forested flat which would make good collecting place, had we the time to spare, at 6500 ft.

Several Rattus of concolor group brought in. Stated to be caught among sweet potatoes.

A female Peromyscus woodbeni with large & French young, caught in hole beneath tree in forest. Altit. 5000 feet.

approximate relation of the localities Efoji, Kagi, & Seregina

Ever since leaving Doriboria I have seen only schistose rocks abounding in biotite, but though here & there with quartz, and tremendously marked & contorted. These break down to a very fertile soil, as proved by the comparatively large native population.

On the slopes approaching Doriboria from S. there were occasional pieces of agglomerate like that of Rona. At the bottom of the valley between Doriboria and Ubari I noticed much slate & shale, greatly deformed, but apparently the same as I saw in the Itiki stream bed & in places on the way down to Taveveri.

Thur. Mar. 11. A fair night & an excellent catch — 26 specimens including as the prize a pair of the rare water-rats Crossomys moncktoni; also a second specimen of Melomys gracilis?, with lots of other Melomys, Stenomys & a Rattus; a second Peroryctes of the ornatus group.

Bad luck last night: a prowling dog got away with one of my three Phalanger sericeus skins. Also Kafamoria has suddenly developed a badly swollen foot which I am giving the hot water treatment.

Tonight will be our last trapping night & I hope to reach 100 specimens for Kagi.

A pair of a gray Pogonomys taken from the same tree — a small knot-hole. Probably this is P. dryas whose type locality is "Dinawa, Owen Stanley Range". The village policeman here knows of a place called "Sinawa" or "Sinawa" on the Kokoda side. The species may well extend over some 2 or 3 thousand feet of altitude and go through the "gap" where the great divide comes as low as 7300 feet.

Black flies in this camp.

Reverting to the collections, the Crossomys were taken in steel traps at the edge of a stream about 400 feet below camp; the Melomys gracilis I caught

myself under a very large fallen log in front of the ridge. The weather has been good for two days. But rain seems to be on the way from the west. I do hope it won't bring the rivers down in flood, especially the Naro, or at least, that the business will be all over by Sunday (when we are due to cross the Naro).

Fri. Mar. 12. Last night just at sundown a Dactylonax, strongly marked + probably D. T. biedermanni, and a macroglossine bat were brought in. The former had been taken from a hole in a tree in forest at about 5000 feet; the latter, the first bat from this area, was found hiding in a bunch of withered leaves on a low bush or tree just below the village of Kogi + not below 5500 feet.

The catch was mostly ordinary, but a handicort of the genus Echinoprea, 3 prs. of mammae, 2 small pouch y. was caught down by the river where a tree crossed it, altitude about 4000 feet. This the highest record of altitude I have as yet for this genus.

I'm not keeping the small Steatomys today (our packing up day) as I have lots already, but of 8 adult ♀s opened I found embryos (2) in one only.

Another trio of the cuscus P. sericeus was brought this morning, 2 ♂, 1 ♀.

After skinning finished, busy packing

There is room for two or three months work in and around this place. I would like to see camps on the Tabenemuro ridge, in the bottom of the Efoji river on one of its branches, on the flat at 6500 feet reached by me March 10th, and up in the gap which Peterson states is 7300 feet. 2-3 weeks in each of those stations would just about clean up this district.

4 pm. Two more species for the list: Pseudochirus cupreus and a long-tailed molossus Pteropteno. The former fr

a hole in a tree, the latter from a hole in the ground; both in forest at about 5500 feet.

5.30 p.m. One last spasm of skinning: Three specimens of the Pogonomys that came in yesterday — a male & two females — all three from a tree containing one small hole. The females, one old one young, neither pregnant. Taken about 3500 feet not very far above the river north of us.

Sat. Mar. 13. Made good time for first day outward bound: Lupa Kaji, 6.30; Tahumuna reached at 10; Emoria, at 12.30. Weather slightly drizzly, but a Kokoda plane flew over us so I judge nothing serious in the way of weather disturbance is in the air.

I have just taken the 8 boards of pinned specimens out of my two collecting boxes to air & dry. The doorway (I have a room at the S. D. A. Mission) is crowded with young & old who have come to look at them.

Have run against the S. D. A. tradition. After selling me some food himself the missionary suddenly recalled that it was his Sabbath. So the order "no more work" filtered around. Fortunately I had already bought enough food for tonight, & I'll give the boys rice for breakfast. I don't think there was the slightest bit of malice in the affair — simply that our arrival & the excitement of it made them forget their Sunday for the moment & come clustering around with food for sale.

Clear, dry afternoon. The Laos River ought to be low tomorrow. Beyond it there are no obstructions except during torential rains which we should not have in the morning (when we do our traveling).

7 p.m. An amusing sequel to the food matter. Six o'clock church service came out, and, apparently, the Sabbath ended. Because the native missionary himself was the first in the field with an

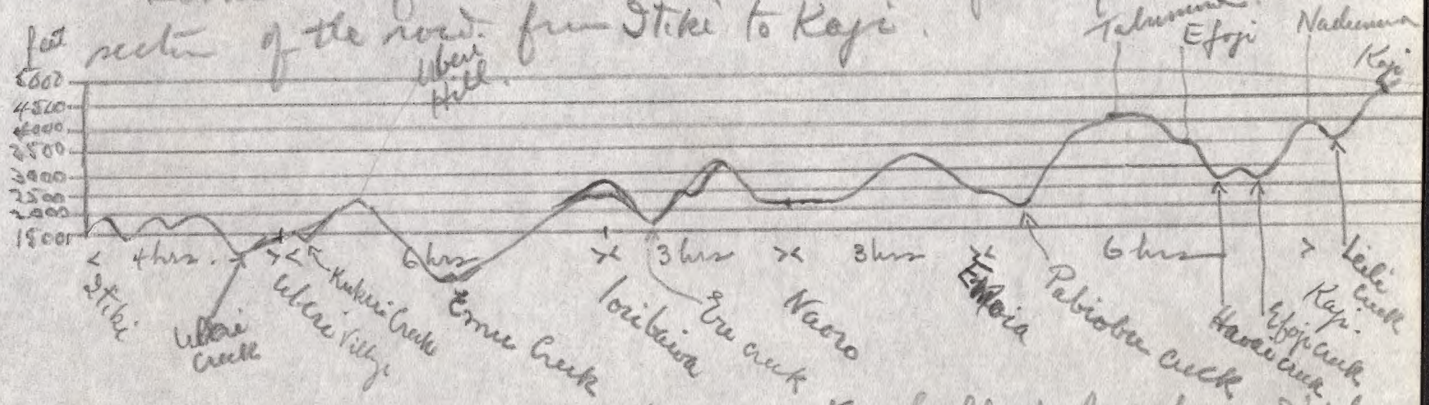
offer of vegetables — through one of the women. But I observed that she gave the shilling to him after I had paid her. They also found some tomatoes for me.

By the way, these people don't pare their root vegetables as we do potatoes. They chop the outer skin off in small pieces — just hold the yam or taro in one hand & chop off the skin layer.

Noon tomorrow should find us in Naoro.

Sun. Mar. 14. A drizzle was falling this morning, and the native food took an awfully long time to cook, so we did not get away until about 7.15. Made good time however in spite of the slippery track, & got into Naoro at 10.30. The river was high — much higher than when we crossed it before, but a log-jam had formed by which we crossed easily.

Looked at from the eastern side the following is a section of the road from Itiki to Kaji.



Naoro is a nasty place, wet & full of leeches. I'll be glad to get away from it.

Mon. Mar. 15. Left Naoro about 6.30; arr'd Loribaiva 10.30. A fine sunny day, much needed. Have unpacked the collections to give them an airing. My carriers very interested with cater butterflies so I have let them have the net & shown them how to kill the insects when caught. From here we can see the sea plainly, that we must be 20 miles away.

Have put on another trafficking drive here. We won't have time to skin many but I think I can now recognize things at sight pretty well. I'll skin doubtful

material anyhow as well as anything rare.

3 pm. Lira has just brought in a live male Ductylopsila which he got out of a hole in a tree. Though the tail is not prehensile at the tip, it is held by the animal (held in one's hands) in a twisted or crooked position. Marsup. times 9 mm.

The 5 o'clock sun, hidden from us by a passing cloud, made the distant sea gleam like silver, & later we saw a wonderfully fine sunset. Av. in the extreme distance, practically due W. across the sea, I could see mountains — perhaps the Yule Island series.

Tues. Mar. 16. Thick mist this morning. Also a slight set-back to our general good fortune in that Taikendo spilt & lost just the ration of peas that had been left overnight to soak, so our carriers had to work on only half a breakfast. However the day's trek contained only one big hill (see p. 16). We left at 8 o'clock, went down to Emua creek, up to the crest of the Uberi range, and down again to the village which was reached at 12.30. That climb of 1500 feet is the last big one; tomorrow we climb 900, & several smaller ridges & that ends the job.

Though nearly 100 traps were set out at Iritaiva last night only 2 mammals were caught: Rattus praetor, and the large Stenomys. As both were taken up at Kapi & none at Itiki nothing can be learned about the Iritaiva fauna from them. The picking up of traps caused our late start today.

The barometer reads at 5 pm. 420 meters. On March 2nd it read 400 at 1 pm.

It's interesting to watch the Koiaris. They live really in total squalor. Their houses (many at least) have neither walls nor floors. The ground is dry & dusty & littered with small cooking fires. They will wipe a plate or tin cup with

unclean fingers or with the filthiest of bits of cloth; their ideas on sanitation are rudimentary – and yet, no Koiari will (if he can help it) enter the village marking his destination at the end of a day's travel without first bathing in a stream; and no Koiari will drink water from a stream criss-crossed by a trail except at the very tops, and even then he walks ten or twenty paces upstream to be sure the water is absolutely unpolluted. They are noisy, jovial people, fond of a practical joke, and picturesque with their hair tied up in a red handkerchief or bound in a tight bundle on top of the head.

Wed. Mar. 17. A guba (storm) struck us about 4.30 in the morning but passed over. At dawn however it began to rain and before we could get breakfast over it was pouring. I had to use some verbal force to get the carriers out into the deluge. But I knew we had to cross the Albert river before it rose too high.

We left at 7 am & going ahead, I reached Sogeri at 10 – soaked to the skin. Everything in good order. Had the pay-off of my Koiaris at 11.30. They all received their money for carrying, and their bonuses for tracking & then turned round & bought a lot of trade goods from me. So that was all right. Rain all afternoon.

Gowro, the boy I had to leave here in hospital, very nearly died. He is still a mere shadow of himself but seeing his pals back again and the news that he will shortly be sent

home to his village will do much to trace him up.

Thurs. Mar. 18. Little doing today except packing. The roads are in bad shape after yesterdays rain. But we hope to go down to Rona tomorrow.

Going to tea this afternoon with Godson and his new wife (married March 3rd).

Johnston just telling me that the plantation boys apparently know everything there is to know about me — also of my leaving the country. They tried to get him to give them things I might leave behind or throw away. One wants my old (worn out) canvas shoes; one asked for a shirt (if I happened to leave one behind), &c.

Fri. Mar. 19 — No rain last night. The roads nice & dry. We marched down from the Depot to Rona rather slowly on account of Gorro — too slowly because a shower came up the valley & drenched us before we quite got in to Rona.

Joan Champion still there but nearly finished. His report finished; his map nearly so. Set out all the small traps in hopes of getting another of the new Phascogale (#3420)

Sat. Mar. 20. In traps: Rattus (conelor grp), Melomys muscali: but (alas) no more Phascogale. We go down to Pat Moseley today.

Reached Moseley 1 p.m. Going to pay off some or all of the boys on Monday.

Sun. Mar. 21. Took all specimens off board this morning. Barom. reading here in Moresby slightly lower than it was in January: about — 10 meters, or 73.85 mm.

Mon. Mar. 22. Packing specimens, arranging business of leaving; boys' pay-off. They got their money all right because about 5 o'clock I saw evidence that they had been spending it. All five were starting out for Koki (the boys' quarters at Moresby) with a large, new paper suitcase and an umbrella.

Tu. Mar. 23. Stuart Campbell flew in from the Oroville camp on the Fly, bringing Ward Williams who was ill with fever.

Wed Mar 24. The "Macdhui" arrived from the south bringing me one letter. Mrs Woodward, wife of the former R.M. of Daru was on board.

Thur. Mar. 25. We sailed at 9 p.m. Cash is on board (prospector & mining engineer). He was on the ship by which we went to Papua more than a year ago.

Saturday Mar. 27 Reached Cairns at 3 pm. Left again at 5.30 pm.

Tuesday - Mar. 30. Arrived Brisbane.

Museum

Saw Longman.
Studied some types.

Sat Apr. 3. Left by s.s. "Otanto" for Sydney —
Apr. 5 Arrived Sydney — Anderson (director) & Troughton (also Ireland).
Worked with Troughton at Museum April 6 to 10.
Sat Apr. 10 Left Sydney —
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i/c mammals & reptiles. Brazenor not only gave me the run of his mammal collections but (being an expert photographer himself) helped tremendously in the securing of photos of skulls. Left Melbourne 5 pm on Apr. 13.

Apr. 15 Arr'd. Adelaide. Met Director, Hale; met later Finlayson (i/c mammals). Not much time to spare. Good collection but worth a lot of work. Catalogue numbers only on most skins; also many specimens have been skinned out of alcohol & colour are unreliable. (Left for Freemantle at 5 pm same day).

Finlayson is a chemistry teacher at the University & goes to the mammal department only twice a week. During the war he injured his eye and hand very badly when experimenting with explosives.

Apr. 19 - Reached Freemantle & took the train to Perth (40 minutes). Found Glauert at Museum. He is Ludwig Glauert & speaks with a strong Scotch accent. No types of recent mammals but some of fossils. Some excellent series of certain W. A. species: Myrmecobius, several Phascogales, Tarsipes, Trichosurus, Dromicia (2 spp), several wallabies; and any rodent, R fuscipes, Notomys about 3 spp, Hydromys fuliginosus; bats, 4 or 5 spp - in quantities.

Also lots of things in alcohol.

Glauert, having most of the work of the museum on his shoulders has no time at all for research. He's willing to work exchanges with us.

Left Freemantle 6 pm that evening.

April 23 - Stopped off Cocos Island about 2000 miles from anywhere to get rid of a barrel containing supplies of books & toilet for the whites (about a dozen) who are stationed there. The only sign of habitation is a wireless mast sticking up above the coconut palms which grow on much of the ring-atoll. The atoll, by the way is incomplete, the reef to NE only just reaching the surface, while the included lagoon (many miles across) has the most lovely turquoise colouring you ever saw.

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Three whale-boats with jib & main sails put off to intercept us & pick up the barrel. Evidently shaving is not one of the popular pastimes on the island. Chief product is copra.

April 27th. Reached Colombo, Ceylon about 6.30 a.m. The ship lay at anchor inside the harbor & launches took people to & fro. Had to make a few purchases & then went out to the museum (in Cinnamon Gardens). Met the Director - Malpas. Phillips is curator of mammals in an honorary capacity but was away at his tea plantation. However Malpas gave me a guide who opened the mammal collection that I specially wanted to see, namely the Muridae. Most of the skulls are uncleaned!

Later had lunch at Galleface Hotel & went for a drive to Mt. Lavinia — which proved not to be a mount at all but a hotel on the sea-shore. However there was an aquarium there

Colombo teems with humanity, beggars, rickshaw-boys; also ox-drawn vehicles & carts pulled by those queer little native bullocks with high shoulders & their heads low-hung. Lots of color everywhere. Roads so narrow that two cars can barely pass. We sailed an hour & a half late (7.30 pm)

May. 2. Aden. Dry, drab depressing volcanic country. The only color is provided by brightly colored native dresses. Big coaling & oil-fueling station. Blazing hot. Camels draw wagons about. About 100 miles of good motor roads. All the passengers were in the native stores, where things were very cheap owing to the fact that Aden is a free port. I picked up a couple of silk things for E. for only 5/- each (English). Hotels abominable; tea good. Quantities of salt manufacturers in evaporating tanks & stacked up ~~like~~ in dazzling

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white mounds. Last rain fell seven years ago.

Passed the corner of Bab-el-Mandeb (which carries two lights) at half an hour after midnight. ~~the~~

May 3. This morning well into the red (not) sea which here is about 140 miles wide. Passed a number of obviously volcanic islands. Temperature at 10.30 a.m. 88°.

May 5. at Port Said. Came through tailend of a sand storm last night as we started through the Suez Canal. A few hours at Port Said & we sailed at 1 pm.

May 6. All afternoon sailing along the south coast of Crete. Very mountainous & very dry. Extremely attractive scenes just the same - scattered bushes & plants. No trees. A black water mark 8 feet up the cliffs must mark a not too ancient subsidence-level, as there is no tide in the Mediterranean.

May 8. Afternoon along the toe of Italy & up through the Straits of Messina where strong tidal currents meet. Missed Stromboli which was passed about 8 pm.

May 9. Awoke to find ship tied up at Naples. C.I.T. man in answer to B.P.'s air mail letter from Port Moresby came on board to help us. Cleared baggage & took to RR station; checked up trains; ~~then~~ went out to look at the ruins of Pompeii. Due to some sort of a picnic in Rome all sleepers were booked up full so got precious little sleep in my 1st. ~~class~~ day-coach. All the line is electrified & gave us endless vineyards & little catch crops planted between the vines. A nearly continuous series of tunnels in the last lap of the journey.

May 10. Genoa 6.30 am. Saw U.S. Consul, named Ramsay & his right hand man Moss. Got rooms at the Hotel Bristol on 20 de Settembre Street.

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L. 30. P. 5.

Next I went to the Museum & met the director, Prof. Oscar de Beaux. He had had my letter from Papua & had a lot of specimens out ready for me, which act I consider exceptionally thoughtful of him. Ellie is due here tomorrow; & I'm very tired though missing my sleep last night & also shutting down.

Tues. May. 18. For several days – in fact a week – El. & I have been working at the Museum. Found most of the types and also a number of other things of interest which I have noted down. De Beaux has done everything possible to help us. Today he went over the general collection. Yesterday he took us out to see his zoological park at Nervi.

Hope to leave on the latter part of this week for Berlin.

Found the types of Phascogale pilicauda, bruijnii, and dorsalis; Perogytes longicauda; Echimypera rufescens and arcuensis; Distoechurus pennatus; ~~Dactylopsila trivirgata albertisii~~ Pseudochirus albertisii, and corinnae; Macropus agilis papuanus; ~~Dorcopsis~~ Pteropus melanopogon papuana, Emballonura beccarii; Rhinolophus arcuensis; Pipistrellus papuanus; Rattus rigens; Melomys bruijnii; Uromys validus; Pogonomys mollipilosus; Hydromys beccarii; Mus (s.s.) albertisii; Leptomys elegans; Rattus dorise (= beccarii); Phascogale dorsalis, and melanura; Phalanger leucippus, gymnotis and carmelitae; Tachyglossus bruijnii.

A few types, expected, were not found, namely

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These two = Toinelle other were chart up the last year

L. 30, P. 6

Dactylopsila t. albertisii and angustivittata; Pseudochirus schlegeli, bernsteini and lewisi; Pteropus chrysauchen, melanopogon arnensis (Berlin) & keyensis (Berlin), and P. degener (Berlin); Rhinolophus keyensis (Berlin); Hipposideros muscina & papuanus; Pipistrellus angulatus.

Thursday. May 27 - Reached Berlin Sunday night - attack fever during day in train. Saw Consul, called on Stresemann and Pohle. Settled down in P.M. Severe fever Tuesday. Wednesday worked in museum. Saw Neumann - very talkative, rather deaf & nearly blind, poor man.

Today met Gabriele Neuhäuser, Jewish & 26, who has recently taken her doctorate with a thesis on Afrikic (Mimi) murder. She must leave country by end of June. Wants go Australia & sell proceeds to Archbold. Neumann intermediate. Asked her (1) do all specimens go to A. (2) Has she settled on terms (3) Is Neumann going to handle collections. Suggested difficulties with Australians if material passes through Neumann's hands. Also proposed her sending whole collection to Archbold to select from & dispose of surplus as she directs.

Met Heinrich (Celebes), Polish & about 45. He is leaving in July for Burma. Wants sell Mimidae to Archbold.

Stresemann took us to Zoo.

Fri. May 28 wrote Archbold abt Miss Neuhäuser & went out late p.m. with Heinrich & the Polish Consul in the latter's Packard to see Wahnsee.

Sat. May 29. Rümmler came in to see me about his Mimidae. - to be published November. R. is out of the museum now & working at something else

Dept depts X. collection and conservation; Female chimp sculpt, Conservation and Design; Pictures chimpanzee, Mahomet's assessors & keepers, and P. chimpanzee; Painting Japanese Equipment; Hippopotamus measurements & footprints; Pigeotailors conservation.

Thursday. May 27 - Received Paulin's letter mailed from Antwerp day in train, Sauveur, called on Hermann du Mesnil. Settled down in P.M. Saw Jean Tillo day. Headquarters notes in Museum. Saw Hermann & very interesting, rather deaf & nearly blind, poor man.

Today met Mr. Ingold Neuchâtel, aged 24, who has recently taken his doctorate with a thesis on Cephalopods (Mainz) Munich. He must have gained by end of time. Would go Constantin & would like to be attached Hermann internationale. Can but he (1) do all preliminary work. (2) Has a bottom or terms (3) Go Hermann going to handle collections. Suggested difficulties with Constantin of making Mr. Hermann's hands. Also pointed his ability & the effort to establish select funds & also poor of going he on a dissect.

Met Dr. Ninnely (Cologne), Polish & about 45. He is here in study for Tuesday. Want call Minister to be elected.

Hermann took us to Zoo.

Fri. May 29. Have been told only Miss Neuchâtel but ask late p.m. visit Hermann & the Polish Consul in the letter's Professor to see Wednesday.

Sat. May 30. Ninnely came in to see me. Only two questions - to be published Nature. Dr. is ask if the Museum has a working & something else.

SUPER
RING BOOK BOND

Mon. May 31. Stein came in this pm. Showed me his Papuan & Timor mammal collections. A young, active man who leaves a good impression. Told me go ahead & describe the shrews he took in Timor.

Attended the Society für Saugetierkunde (monthly meeting) in the evening. Three papers were read — all on hybridization.

Wed. June 1. Chapin turned up today. Has gained 2½ kilos in weight but very fit looking.

Sat. June 4. Met Schultz-Kempfenger who has just returned from his expedition to the Tari River, n. of mouth of Amazonas. He reports no savanna at all there. Leaves Sunday for Congo.

Thursday, June 9. At 9 a.m. left Berlin for Leyden. A hot, dusty trip. Reached L. at 10. p.m.

Friday June 10. Met Junge (in charge birds & mammals; Broschma (Director); and L. D. Brongersma (Herpetology; Felidae, &c). All very pleasant people. Wed we at work by the afternoon & got through second Typer. Interesting to find that "Mus rufescens" Tentink is not a Melomys but a Rattus

Sat. June 11. Had lunch with the Junges.

On Sunday we went out for the day with the Junges to the sand dunes at Katwijk. On Monday we were out for the evening with the Brongersma's. He is Herpetologist & also does some groups of mammals. Thursday took dinner at the house of Broschma the director where met Dr. Becking, plant physiologist. Sunday went with Broschma & two of his children to Amsterdam zoological Gardens. The previous Friday we went to Amsterdam to study the types of Sody's

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Sat. June 4. Met Schultz-Kempfer who has just returned from his expedition to the Tari River, N. of mouth of Amazonas. He reports no sea-cows at all there. Leaves Sunday for Cargo.

Thursday, June 9. At 9 a.m. left Buda for Leyden in hot, dusty trip. Reached L. at 10 p.m.

Friday June 10. Met Junge (in charge lower mammals); Broschma (Director), and L. D. Brongersma (Herpetology, Felidae, etc). All very pleasant people. Met we at work by the afternoon of the third & second Typer. Interesting to find that "Mus" rufescens Tentink is not a Melomys but a Rattus.

Sat. June 11. Had lunch with the Junges.

On Sunday we went out for the day with the Junges to the sand dunes at Katwijk. On Monday we were out for the evening with the Brongersmas. He is Herpetologist & also does some groups of mammals. Thursday took dinner at the house of Broschma, the director where met Dr. Becking, plant physiologist. Sunday went with Broschma & two of his children to Amsterdam zoological Gardens. The previous Friday we went to Amsterdam to study the types of Sody's

collection. We did the rodents (22 species); he has described almost 57 altogether. Today is Sunday June 19.

Tuesday June 29. We finished at Leyden last Thursday, and were in England Friday morning, having crossed from Hook of Holland to Harwich, & thence to London. Went to museum in afternoon. Saw Morrison-Scott the new mammal man. And the next day Hinton & Dollman. Met Fellows, Oldfield, Hunt and King (the last a new comer).

Settled down to first days work Monday morning.

Thurs. July 8. We started with Papuan marsupials & bats. Met Shaw Mayer, & a fellow named Morrison who is going to Peru collect. The former is going out to E. Papua in about a week from now. Also met Frost who has collected in Java.

Mr. Sclater, editor of Zoological Rec. took us to lunch the Wed. day.

Have done no photographing yet because the "contax" needed overhauling, (Just got it back) so there is a vast accumulation of type skulls awaiting the taking of their pictures. Starting Papuan rodents tomorrow.

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25

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3.1